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ABSTRACT

The 303 items in the annotated bibliography are arrayed under four headings: (1) general literature--economic issues, (2) general literature--nonformal education, (3) economics of nonformal education (including cost-benefit analysis, investment and return in human capital, and economics of on-the-job training and retraining), and (4) planning and development. The author states that much of the literature is scanty, not sharply focused, and bears on nonformal education only indirectly or by inference; many of the entries deal with the larger topic of the economics of education, but by inference or accident have some particular relevance to nonformal education. (Author/PR)

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PROGRAM OF STUDIES
IN NON-FORMAL EDUCATION

Supplementary Paper No. 3

THE ECONOMIC ASPECTS OF NON-FORMAL EDUCATION

A SELECTED ANNOTATED BIBLIOGRAPHY

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Program of Studies in Non-Formal Education

Supplementary Series

THE ECONOMIC ASPECTS OF NON-FORMAL EDUCATION

A Selected Annotated Bibliography

by

M. A. Mannan

Institute for International Studies in Education
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with the cooperation of the
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FOREWORD

Some months ago Mr. A. Mannan and I became associated in work related to the economics of "non-formal education." We knew little about the dimensions or characteristics of the subject which put us only a little behind our colleagues working on other aspects of the same topic. Phase I of our activities comes to a close with the production of two pieces: a monograph on the subject of "trends and issues in non-formal education" and this bibliography.

It was logical to begin the study by seeking out and absorbing the wisdom of the literature. As expected, it is scanty and not sharply focused. The "economics of education" is, after all, not a mature, well-tested sub-area of economics with established doctrines, procedures, and knowledge base. A new and much more amorphous segment of the whole--if indeed "non-formal" should be considered a portion of the field of "education" at all--would hardly be expected to be rich in the way of a comprehensive, clear body of literature. A bibliography then comes as a first step in attempting to seek out the dispersed and to order the confused.

Much of what was found bore upon non-formal education only indirectly or by inference. Again, this is to be expected: the literature of the economics of education does have something to say about the new offspring, "non-formal," but it is seldom direct and even more seldom, exclusive. So it is that many of the bibliography's entries are those, perhaps already familiar, which deal with the larger topic but which by inference or accident have some particular relevance to non-formal education. This results in redundancy to those already familiar with the broader field, but it should be a blessing to those not so cognizant of the literature and specifically concerned with non-formal education.

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v 1975

A. GENERAL LITERATURE - ECONOMIC ISSUES

A. GENERAL LITERATURE - ECONOMIC ISSUES

1. Alchian, Armen A. "Cost-effectiveness of Cost-effectiveness." In Defense Management, pp. 74-86. Edited by S. Enke. Englewood Cliffs, N.J.: Prentice Hall, Inc., 1967.

   This article attempts to make a critical review of "cost-effectiveness" calculations as developed in the Department of Defense. It is important as a reasoned, objective examination of the methodology which can be applied to non-formal education programs, as Cost-effectiveness analysis is mainly concerned with the efficient management of resources.

2. Arrow, Kenneth J. "The Social Discount Rate." In Cost Benefit Analysis of Manpower Policies, Proceedings of the North American Conference, May 14-15, 1969, pp. 56-75. Edited by G. G. Somers and W. D. Wood. Jointly published by the Industrial Relations Centre, Queens' University, Kingston, Ontario, and the Center for Studies in Vocational and Technical Education, The University of Wisconsin, Madison, Wisconsin, 1969.

   The market rate of return cannot be used as a measure of its opportunity costs. He indicated the following four problems in identifying the social discount rate with market rates: (1) "The divergence between private values and market behavior because of the capital market imperfections; (2) the divergence between social values and private costs in the products of government in investment activity; (3) the divergence between social and private values with regard to perspectives for the future. At a somewhat lesser level of generality, there is a fourth problem which has been mentioned prominently: (4) the imperfection of the capital market due to especially the corporate income tax." He rightly argued that government investment produces public or collective goods which cannot suitably be left to the market. But this problem of divergence would be irrelevant in an ideally centralized economy.

3. Arrow, Kenneth J. "Criteria for Social Investment." Water Resources Research, Vol. 1, No. 1965, pp. 1-8.

   An over-all optimum of social investment for the economy requires that the discount of future benefits must equal their discount according to opportunity costs and time preference respectively. Divergences between social and private cost are discussed as well as problems in the measurement of costs and benefits. The article is of a general nature pertaining to social investment of which non-formal education is a part.

4. Bain, Joe S. "Criteria for Undertaking Water-Resource Development." American Economic Review Papers and Proceedings, Vol. 50, No. 2 (May, 1960), 310-320.

The general investment criteria along with the interest rate to be used in intangible benefits and project design are discussed with particular emphasis on water-resources development projects. No mention of non-formal education is made, but the principles do have general application including educational investment. Two investment criteria are examined, one of which aims at maximizing the ratio of discounted net benefits to given capital outlays, and the other aims at maximizing the ratio of gross benefits to all costs, both capital and operation. Perhaps the second approach would be more suitable as a choice criterion of educational investment than the former.

5. Balogh, T. and P. P. Streeten. "The Coefficient of Ignorance." Bulletin of the Oxford University Institute of Economics and Statistics, Vol. 25, No. 2 (May, 1963), 99-107.

Attempts have been made to estimate the coefficient of ignorance (e.g., the contribution to growth made by expenditure on research, education and other forms of non-physical investment which is responsible for development of human resources and social infrastructure) in production function. The importance of investment in human capital in advanced countries and its implications for LDCs are discussed.

6. Bateman, Worth. "An Application of Cost-benefit Analysis to the Work-experience Program." American Economic Review Papers and Proceedings, Vol. 57, No. 2 (May, 1967), 80-90.

Shows the application of an important decision criterion--e.g., break-even time--a criterion applicable to non-formal education. The break-even time is the point from which the accumulation of sum of the net values exceeds the costs. The author employs this criterion for evaluating the work-experience component of the program which seeks to increase the employment and earning capacity or potential of the recipients of public assistance which are transfer payments for which no repayment or return is expected. He argues that the social and economic returns related to an individual's participation in a training program may be different. Since it is virtually impossible to estimate the factors by which these two benefits of the program should be adjusted, break-even analysis is applied: the ratio of incremental costs and the estimated present values of the future earnings of an additional participant of the program indicates as to how much increase in earnings would be necessary for the program to break even. This is a chronological concept rather than the more traditional input-related concept of economics and training administration.

7. Baumol, William J. "On the Social Rate of Discount." American Economic Review, Vol. 58, No. 4 (Sept., 1968), 788-802.

He argues that inappropriate rates of discount for public projects may lead to serious errors in the calculation of benefit-cost ratio. Because the expected rate of return is the same in the public and private sectors, the very existence of corporate taxes requires of the government sector some adjustment in calculating the social rate of discount. Furthermore, while discussing the role of consumer's subjective time preference and investment as a public good, he maintains that public intervention may be needed in case of externalities. This article is useful in selecting the appropriate rate of discount for public and private investment in non-formal education.

8. Becker, G. S. and B. R. Chiswick. "Education and the Distribution of Earnings." American Economic Review, Vol. 6, No. 2 (May, 1966), 358-369. Papers and Proceedings of the American Economic Association, New York.

According to authors, "This paper has developed and applied to several bodies of evidence a theory of the distribution of earnings. The principal attraction of the theory is that, unlike most other approaches to income distribution, it does not consist mainly of mechanical curve fitting or ad hoc probability mechanisms, but rather relies fundamentally on maximizing behavior, the basic assumption of general economic theory. Each person is assumed in effect to maximize his economic welfare by investing an appropriate amount in human capital, and the distribution of earnings is determined by the distribution of investments and their rates of return. These determinants are in turn related to various institutional factors which also play an important part in our theory; inheritance of property income, equality of opportunity, distribution of abilities, subsidies to education, and other human capital, etc."

9. Becker, Gary S. "Investment in Human Capital; a Theoretical Analysis." Journal of Political Economy. Vol. 70, No. 5, Part 2 (October, 1962 suppl.), 9-49.

Various kinds of investment in human beings, including on-the-job training, schooling, information and health are discussed. On-the-job training is dealt with intensively because of its impact on earnings, employment and other economic variables. He maintains that the most single determinant of the amount invested in human capital is the rate of return. Given the present values of the net earning, the costs and the internal rate of return can be measured from the net earnings information and the return on investment in skills and knowledge is determined by absolute wage differences.

10. Ben-Porath, Yoram. "The Production of Human Capital and the Life Cycle of Earnings." Journal of Political Economy, No. 1.75, No. 4 (August, 1967), 352-365.
He maintains that the theory of human capital as developed by Becker and Mincer provided a novel view of the life cycle of earnings by linking it to the time profile of investment in human capital. He developed a model which generates some of the qualitative characteristics of the observed life cycle of earning--initially no earnings followed by a period of earning rising at diminishing rate and eventually declining. Within this framework, the part played by increasing costs or diminishing returns in the explanation of gradually rising portion in the individual life cycle of earning is explained.

11. Black, J. "Arguments for Tariffs." Oxford Economic Papers, June, 1959, pp. 205-206.
That sometimes the alleged external economies from the on-the-job training have been considered part of the "infant industry" argument for protection is discussed.

12. Blaug, Mark. "Approaches to Educational Planning." In Human Capital Formation and Manpower Development, pp. 486-496. Edited by Ronald A. Wykstra. New York: The Free Press, 1971.
A definitive comparison of three alternative techniques or approaches (social-demand projection, manpower forecasting, and rate of return analysis) used in educational planning and the way in which they relate to planned and market economies is presented. They are not related specifically to non-formal education, but then application is clear.

13. Blaug, Mark. An Introduction to the Economics of Education. New York: Penguin Books, 1972, Chapters 6, 7, 8.
This book deals with a number of important topics such as formation of human capital, cost-benefit analysis, issues in financing of education, with direct and indirect implication for non-formal education. In Chapter 6, the economics of on-the-job training are discussed. I agree with the editor's following comment on the book: "Professor Blaug has written a very important book, it is a textbook in as much as it brings together on a systematic basis all the many different economic considerations which bear (or should bear) upon educational policy. It will be used as a text both by educationists and by economists. Not only students of the economics of education but students of development economics, labour economics, and agricultural economics will find in it fresh analytical insights and a discussion of numerous policy considerations which bear upon economic growth and upon the efficient allocation and use of manpower. All students of "welfare economics" will find their understanding by both issues and methodology deepened by this work."

14. Bowman, Mary J. "Social Return to Education." International Social Science Journal, Vol. 14, No. 4 (1962), 647-659.

While evaluating the social returns to education she discusses:

a. The quality of education embodied in the labor force and its contribution to GNP through application of internal rate or return.
b. The relations among components of social and private returns.
c. Empirical measurement of changes in monetary private and social returns over time.
d. Characteristics and determinants of non-private monetary return.

Finally she attempts to fuse the aggregate of individual returns to social return. Clearly the analysis on the social returns to education has important implications for non-formal education.

15. Breckner, Norman V. and Joseph H. Noah. "Costing of Systems." In Defense Management, pp. 42-59. Edited by Stephen Enke. Englewood Cliffs, N.J.: Prentice Hall, Inc., 1967.

The role of cost, synthesis of system, and other topics related to decision criteria such as the use of historical data, cost quantity relationship, estimating decision procedure, and early estimates for advanced system, are discussed. This article is mainly concerned with a non-market activity such as defense, in which the various levels of its achievement are not readily represented by dollar magnitudes. What is often needed is the comparison of effectiveness of two systems of equal cost. The analysis and topics related to decision criteria have general application including non-formal education programs.

16. Brookings Institution. "Can Benefits and Cost of Public Investments be Measured?" Brookings Research Report, No. 32. Washington, D.C., 1965, p. 8.

This report presents some highlights from Measuring Benefits of Government Investments, edited by R. Dorfman. The seven papers included in the volume discuss whether social value of benefits can be estimated; how cost-benefit analysis can be applied in various contexts, what difficulties are to be faced and how these difficulties can be overcome. Essentially, this report is concerned with theoretical problems involved in measuring costs and benefits. It has general applicability.

17. Buchanan, J. M. and W. C. Stubblebine. "Externality." Economica, Vol. 29, No. 116 (Nov., 1962), 371-384.

A precise definition of externality has been attempted. The concept of marginal and infra-marginal externality and of Pareto-relevant and Pareto-externality are developed. This article is useful because any investment in education--both formal and non-formal, is likely to produce "spillover" costs and benefits. Cost-benefit analysts must be alert to these externalities and should calculate immediate and important cost and benefit. This article provides a conceptual framework of "externality."

18. Cain, G. G. and R. G. Hollister. "Evaluating Manpower Programs for the Disadvantaged." In Cost-Benefit Analysis of Manpower Policies, Proceedings of a North American Conference May 14-15, 1969, pp. 16-29. Edited by G. G. Somers and W. D. Wood. Published jointly by the Industrial Relations Center, Queens' University, Kingston, Ontario and the Center for Studies in Vocational and Technical Education, The University of Wisconsin, Madison, Wisconsin, 1969.

Social action programs are very complex and guided by multiplicity of objectives. Thus, no simple, overall judgement is possible with regard to a program. Nonetheless, cost-benefit analysis can contribute to the decision-making process providing it focuses upon variables with which it can completely deal. They suggest application of the "replicability criterion." To bring under consideration only those characteristics which are clearly replicable from project to project and also under administrative control. A non-formal education depending upon the "warmth and enthusiasm" of the teachers on a nationwide basis would not qualify since the characteristic is not replicable nor do administrators have control over the level of "warmth and enthusiasm" of teachers. This view of control of variables deserves consideration in evaluating non-formal education projects but too much emphasis on the "replicability criterion" may result in under evaluating.

19. Carnoy, Martin. "The Political Economy of Education." In Education and Development, Latin America and the Caribbean, pp. 177-215. Edited by Thomas J. Labelle.

The author maintained that this paper is concerned primarily with the role of education systems in economies which are development-oriented and those already influenced by modern elites. Schooling is touted as an important allocator of socio-economic roles in such economies and the ruling group becomes subjected to great pressure from non-elites to provide education for everyone (social demand). Since education is held up by the elite as the basis of their rule and as the means to gain economic advantage and

social status, access to education becomes a crucial political issue. A dilemma for the elite is how to satisfy the social demand for more and more schooling without giving away economic and policy-making power. The current structure of schools solves this dilemma by restricting the high return (in terms of higher income) component of formal education to schooling levels accessible almost exclusively to the elite. In conclusion he argued that "any meaningful concept of development must include a specific theory of distribution of economic and social gains. If education has served to increase per-capita income, it has done so in a very skilled manner, consistent with the elites' narrow view of economic and social development." Thus, the implications for non-formal education are evident.

20. Ciriacy, Wantrup, S.V. "Benefit Cost Analysis and Public Resources Development." Journal of Farm Economics, Vol. 37, No. 4 (Nov., 1955), 677-689.

The policy aspects of benefit-cost analysis are discussed under the following main headings: abuse of benefit-cost analysis, quantifying in cost-analysis, extra-market benefits and costs, primary (direct) and secondary (indirect) benefits and costs. The author seems to favor cost benefit analysis partly because it restrains the abuse of economic arguments in the political process and partly because of the need for stimulus to further research. While discussing the problem of accommodating intangible and indirect benefits and costs, he maintains that the intangible may be evaluated through indirect use of market data, although it is not, however, evident to what extent they should be considered and added to the direct cost-benefit framework.

Non-formal education programs are intangible. The importance of the article lies in the fact it discusses the abuses and uses of both direct and indirect intangible costs and benefits and problems associated with them.

21. Coase, R. H. "The Problem of Social Cost." Journal of Law and Economics, Vol. 3 (Oct., 1960), 1-44.

This article is "concerned with those actions of business firms which have harmful effects on others. The standard example is that of a factory the smoke from which has harmful effects on those occupying neighboring properties. The economic analysis of such a situation has usually proceeded in terms of a divergence between the private and social product of the factory in which economists have largely followed the treatment of Pigou in "the economics of welfare", the conclusion to which this kind of analysis seems to have led most economists is that it would be desirable to make the owner of the factory liable for the damage caused to those injured by the smoke, or alternatively to place a tax on the factory owner varying with the amount of smoke produced and

equivalent in money terms to the damage it now causes, or finally, to exclude the factory from residential districts." Indicating that the suggested courses are inappropriate, the author recommends the use of opportunity cost concept. This article, although concerned with a technical problem of the inter-relationship of law and economics in the light of a number of hypothetical and documented cases, is useful for evaluating non-formal education programs also. Non-formal educational output is essentially a complex social product: as such the problem of social cost is associated with it. This article has given a good exposition of the dimensions of the problem of social costs.

22. Coombs, Philip, H. and Jacques Hallak. Managing Educational Costs. New York: Oxford University Press, 1972, p. 288.

The book explores: (1) how educational costs behave, (2) why they behave as they do, (3) how various educational systems and institutions (both formal and non-formal) have actually used cost analysis and with what results, (4) how educational analysts can utilize cost analysis in their own institutions, and (5) how decision-makers can profit from the results. The authors have made a general analysis which has a clear bearing on the management of non-formal education.

23. Cornelsen, Leroy A. "The Economics of Training the Unemployed." School Life, Vol. 47, No. 1 (Oct., 1964), 17-18.

Using a sample of Manpower Development Training Act (MDTA) trainees, the author summarizes a study made by the Office of Education of the costs and monetary returns from the training of the employed. While measuring the costs which includes instructional costs, all allowances, etc., the complete sample of trainees is taken into consideration. The measurement of monetary return is based on the earnings of those who went to work immediately. When this group of trainees worked for twenty-four weeks, the trainee is expected to repay the cost of the training--a kind of break-even point for the investment made. The main defect of this study is that it ignores the non-monetary benefits. Besides, no attempt has been made to adjust the income of those who did not get the employment immediately.

24. Dymond, W. R. "The Role of Benefit/Cost Analysis in Formulating Manpower Policy." In Cost-Benefit Analysis of Manpower Policies, Proceedings of a North American Conference, May 14-15, 1969, pp. 16-29. Edited by G. G. Somers and W. D. Wood. Published jointly by the Industrial Relations Center, Queens' University, Kingston, Ontario and the Center for Studies in Vocational and Technical Education, the University of Wisconsin, Madison, Wisconsin, 1969.

"Benefit/cost analysis in the manpower field is primarily a rigorous analytical aid to managerial decision-making, with

perhaps some clues as to the appropriate distribution of resources between programs. It has substantial limitations particularly with respect to the collective or social responsibilities of government as a basis for the substantial revision of human resource development programs." This article is particularly helpful in delineating appropriate and inappropriate uses for cost benefit analysis. Cost-benefit analysis should throw light on when to "raise and lower expenditures and in what directions the expenditures should flow."

25. Eckhaus, R. S. "Economic Criteria for Education and Training." Review of Economics and Statistics, Vol. 46, No. 2 (May, 1964), 181-190.

The measurement of human capital and its rate of return is discussed with special reference to the use of rate of return criteria for education. The author is highly critical of the use of rate of return approaches to education because prices in the market do not generally reflect the true securities of the factors involved. He suggested an alternative approach which will estimate educational requirements of the different sections of the economy directly. Even if this approach is adopted the author is not clear as to how to avoid the problem of estimating the "expected costs" and expected returns from any educational investment." This article is important because program evaluation is a principal component of the economics of education. In many cases, the fundamental problem is not the lack of resources but rather their proper allocation and management.

26. Eckstein, Otto. "Interest Rate Policy for the Evaluation of Federal Programs." Hearing Before the Subcommittee on Economy in Government of the Joint Economic Committee, Congress of the United States, 90th Cong., 2nd sess. Washington, D.C.: Government Printing Office, 1968, pp. 50-57.

The author maintains that capital market imperfections have given rise to two concepts: the social rate of time preference derived from theoretical models of economic growth and the opportunity cost of public capital which has to be understood in terms of "displaced alternative investment opportunities." The author favors adoption of the concept of the opportunity cost of public capital investment. The main conclusion of this article is as follows:

1. Identify the actual opportunities that are forgone and measure the flow of returns that would have been earned in the alternative use;
2. Apply the social rate of time preference to derive the present value of the returns forgone in the alternative use;
3. Undertake only those public investments which yield more present value per dollar of expenditure than the forgone alternatives.

This aids in the selection of the appropriate discount rate for the purpose of calculation of benefit/cost ratios in so far as non-formal education investigation goes.

27. Eckstein, Otto. "A Survey of the Theory of Public Expenditure Criteria." In Public Finances Need Sources and Utilization, pp. 439-504. Edited by J. M. Buchanan. Princeton: Princeton University Press, 1961.

The need for a choice of an objective function in a decision model is stressed as an element in the theory of public expenditure. This aspect is highly useful in the evaluation of non-formal education programs because the objective function must be suited to the problem at hand and is usually maximized under constraints which must be built into the analysis. The author distinguishes physical, legal, administrative, distributional, uncertainty, financial or budget constraints. The problem of choosing of the interest rate for valuing outputs accruing at different points of time is discussed--a discussion having general application.

28. Edding, Friedrick. "Estimating Costs of Educational Requirements." Planning Education for Economic and Social Development. Paris: OECD, 1963, pp. 233-244.

The problems of estimating the capital and current costs of educational expansion programs are discussed. Non-formal education is not treated as such, yet this work is important in understanding non-formal educational program costs.

29. Fapolunda, Olanrewaju J. "Trained Semi-Skilled Workers in the Traditional Sector of Dualistic Economies: The Case of Motor Mechanics in Nigeria." Paper presented at the 14th Annual Meeting of the African Studies Association, Denver, November 3-5, 1971.

It is argued that the best means to transform the traditional sector is to upgrade and expand the non-formal education system, even at the expense of the formal educational system. In Nigeria, this would mean transforming and upgrading the quality of the apprentice system.

30. Felstein, M. S. and J. S. Flemming. "The Problem of Time-Stream Evaluation: Present Value Versus Internal Rate of Return Rules." Bulletin of the Oxford University Institute of Economics and Statistics, Vol. 26, No. 1 (February, 1964), 79-85.

Compares two important decision criteria. The present value criterion is preferred to the internal rate return on the grounds that the comparison of the incremental or simple rate of return with any representative market interest rate may be misleading since the rate is very likely to change over time. The present value criterion does not necessarily

call for a constant discount rate. Further, the case for the present value criterion is strengthened if a budget constraint is introduced. The paper does not deal with the inappropriateness of the present value criterion for non-marketable types of investment (e.g., non-formal education for military purposes).

31. Forrester, D. R. "The Costs and Benefits of Industrial Training." Technical Education and Industrial Training, Vol. 9, No. 2 (February, 1967), 60-65.

While discussing the difficulties involved in forecasting manpower requirements, he discussed, among others, the basis of levy and grant systems as introduced by the U.K. The levies are imposed on companies in an industry where government financed the training of apprentices through Industrial Training Boards. But grants are given to companies in an industry which arrange their own training of apprentices through on-the-job or off-the-job training. The author has strongly recommended that companies should attempt a cost benefit analysis of the industrial training.

32. Grosse, Robert N. "An Introduction to Cost Effectiveness Analysis.: Mclean: Research Analysis Corporation, July, 1965, p. 27.

The primary ingredients of cost-effectiveness analysis are discussed. These ingredients are as follows: objectives, alternative means or systems; costs or resources required by each system; a set of relations among the objectives, alternative means, environment, and resources; and a criterion for choosing the preferred alternatives. The author discusses these ingredients with the help of various diagrams illustrating cost effectiveness curves; equal effectiveness curves or isoquants and budget line. Evidently the paper has its implications for evaluation of non-formal education programs although the economic analysis of the paper is direct to military planners and decision makers.

33. Hallak, J. The Analysis of Educational Costs and Expenditures. Paris: UNESCO, IIEP, 1969. (Fundamentals of Educational Planning.)

An examination of some critical problems in the concepts, the estimates, the analysis, and the use of unit costs in educational planning. Includes useful illustrative data with analysis of the experience of France and Tanzania in testing the financial feasibility of educational plan. This is a frontier literature in respect to non-formal educational costs and expenditures. Unlike dams or steel mills, it is hardly possible to calculate the rate of financial return on a non-formal educational project because of separating social, cultural, political and economic aspects of the non-formal educational product. Still any kind of program evaluation--formal or non-formal education projects demand an effective analysis of costs and expenditures in spite of the difficulties. Viewed from this perspective, this article is important for non-formal education.

34. Hammond, Ricard J. "Convention and Limitation in Benefit-Cost Analysis." Natural Resources Journal, Vol. 6, No. 2 (April, 1966), 195-222.

The shortcomings and limitations of cost-benefit analysis are discussed under the following headings: benefit-cost analysis as an administrative device; contradictory doctrine of benefit maximization; the debilitating assumption of perfect foresight; the indispensibility of policy presuppositions; the interest limitation of benefit cost procedures. This article is in fact a critique of the report of the U.S. Federal Inter-Agency River Basin Committee sub-committee on benefits and costs in which they adapted the criteria of maximizing net benefits for public project evaluation. The author argued that if this criterion is applied, it is impossible to choose on economic grounds between projects having identical net benefits with differential costs. The use of benefit cost ratio is favored. But his assumptions that future benefits and costs can be predicted with certainty is not realistic. His discussion on the inherent limitations of benefit-cost procedures is essentially valid as a guide to evaluators of non-formal education programs.

35. Harberger, A. C. "On the Opportunity Cost of Public Borrowing." Hearings Before the Sub-Committee on Economy in Government of the Joint Economic Committee. Congress of the United States, 90th Cong., 2nd sess. Washington, D.C.: Government Printing Office, 1968, pp. 57-65.

He argued that when government borrowing displaces private investment, the cost of the borrowing can be measured in terms of rate of interest on government bonds plus all taxes forgone because of the government borrowing. These taxes should include corporation taxes, income taxes, property taxes, sales and excise duties.

It is extremely important to know the implications of opportunity costs of financing a non-formal educational program through borrowing. The question of cost measurements can be further complicated by including leisure in calculation of income or output.

36. Harberger, Arnold C. "Investment in Men versus Investment in Machines: The Case of India." In Education and Economic Development, pp. 11-50. Edited by C. A. Anderson and Mary Jean Bowman. 1st ed. Chicago: Aldine Publishing Company, 1965.

While evaluating the economic rate of return to society as a whole in respect of investment in physical capital-versus-investment in formal education at secondary and higher level, the author goes into considerable methodological detail to indicate ways of making a good use of questionable data--methodology which may be used in the case of informal education return.

37. Hardin, Einar. "Benefit-Cost Analysis of Occupational Training Programs: A Comparison of Recent Studies." In Cost-Benefit Analysis of Manpower Policies. Proceedings of a North American Conference, May 14-15, 1969, pp. 16-29. Edited by G. G. Somers and W. D. Wood. Published jointly by the Industrial Relations Center, Queens' University, Kingston, Ontario and the Center for Studies in Vocational and Technical Education, the University of Wisconsin, Madison, Wisconsin, 1969.

This survey compares concepts, methods, and findings of cost-benefit analysis of retraining courses for experienced adult workers. Hardin attempts to put the results of these analyses on a comparable basis, from three points of view (that of society, of the individual trainee, and of the government) and finds that in every case the investment in training is more profitable to society than an alternative investment in physical resources yielding 10 per cent.

Whether or not the government ever recovers the funds it invests in retraining remains uncertain, especially for long programs. Short courses particularly offer an adequate economic incentive for individuals to enroll. It appears that retraining is a socially profitable undertaking; the very least, it does not appear inferior to investment of the resources of society in tangible capital in manufacturing. From a purely economic point of view, relatively more resources should be invented in short-duration programs as opposed to longer training efforts. These findings are of great significance to non-formal education, although they apply specifically to a particular type of program.

38. Hardin, Einar and M. E. Borus. "An Economic Evaluation of the Retraining Program in Michigan: Methodological Problems of Research." Proceedings of the American Statistical Association, 1966, pp. 133-137.

The paper discussed the methodological problems under the following headings: (A) Estimating the social product gains, (B) Control group design, (C) Quality of earnings data, (D) Measuring the marginal social cost of retraining. Although these problems have been discussed with special reference to the evaluation of the Michigan retraining program, their analyses can be applied to a variety of cost-benefit studies of manpower development programs of the United States which give emphasis on non-formal education.

39. Heymont, Q. O., Bryk H. Linstone and J. Surmeier. Guide for Reviewers of Studies Containing Cost Effectiveness Analysis. Maclean: Research Analysis Corporation, 1965, p. 76.

A list of 73 key questions concerning the use of cost-effectiveness analysis grouped under the following headings: statement of the problem; assumptions; alternatives, documentation; costs; relationships (models); effectiveness criteria and conclusions and recommendations. The questions which are of particular importance are listed as selected questions (15 in all) and are outlined in the text.

This book should serve as a practical manual for project evaluation including non-formal education programs although this book is mainly concerned with the use of cost effectiveness studies in military decision-making.

40. Hill, F. F., Don Adams and Roger Brittain. "Education: The Need for Constructive Ideas." International Development Review, Washington, D.C., Vol. 4, No. 4 (December, 1962), 4-12.

This article is an appraisal of the influence which imaginative educational expansion can potentially have on the development process--an influence which non-formal education can have on development also.

41. Hines, Lawrence G. "The Hazards of Benefit-Cost Analysis as a Guide to Public Investment Policy." Public Finance, Vol. 17 (1962), 101-117.

While considering the implications of the implementation of a report submitted by a sub-committee of the U.S. Federal Inter-Agency River Basin Committee in 1950, the mechanics of benefit cost analysis, the comparability of private-vs-public costs and the limitations of market data as criteria for public investment, are discussed. Since the problem of resource allocation has assumed a greater significance in the present-day context of employment and inflation, benefit cost analysis has its role to play in spite of its limitations, hence its importance as an investment guide to non-formal education. It is pointed out that benefit-cost analysis must be confined to a sub-optimizing role.

42. Horowitz, Morris A. and I. L. Herrnstadt. "The Training and Education of Tool and Die Markets." In Development and Use of Manpower, Proceedings of the Twentieth Annual Winter Meeting. Washington, D.C.: Madison Industrial Relation Research Association, December 28-29, 1967, pp. 15-24.

This is an important article indicating that non-formal education can be an alternative insofar as the skill acquisition in tool and die making is concerned. Using a sample group of trainees, the authors examine the relationship between training and performance on-the-job. The ability rating of workers' time spent in learning the skill are some of the criteria used in measuring the effectiveness of training. The authors did not rule out the possibilities of

acquiring this skill through vocational high school. The attempt to evaluate the effectiveness of the various alternative patterns of acquiring the skill is an important approach.

43. Hoselitz, Bert F. and Willeret E. Moore, eds. Industrialization and Society. Paris, UNESCO, Roufon, 1963, p. 448.
A volume of readings on the social aspects of the industrialization process which includes one study specifically dealing with the effects of educational systems on modernization.

44. Hu, Teh-wei, J. J. Kaufman, M. L. Lee and E. W. Stromsdorfer. "The Theory of Public Expenditure." In Education and the Economics of Human Capital, pp. 89-104. Edited by R. A. Wykstra. New York: The Free Press, 1971.
Related particularly to vocational technical education, the authors construct a general theory of public expenditures for both formal and non-formal education. The major dimensions of educational benefits and costs are identified as are the theoretical criteria used for determination of the best mix of alternative programs.

45. Jennes, Robert A. "Manpower Mobility Programs." In Cost-Benefit Analysis of Manpower Policies, Proceedings of a North American Conference, May 14-15, 1969, pp. 16-29. Edited by G. G. Somers and W. D. Wood. Published jointly by the Industrial Relations Center, Queens' University, Kingston, Ontario and the Center for Studies in Vocational and Technical Education, the University of Wisconsin, Madison, Wisconsin, 1969.
The manpower mobility program of Canada and related cost-benefit analyses are the topics. Under this program any unemployed or underemployed worker who has an offer for a permanent job in another community is eligible for federal assistance providing there are no suitable jobs locally. Recent work on mobility concentrates on:
(a) identification of causal forces;
(b) statistical prediction models;
(c) investment models that calculate the stream of income differentials to individual workers.
The benefit-cost model outlined in this paper combines elements of all three. The significance of this article lies in the evident job-orientation of most non-formal education programs and the possible non-coincidence of participants, programs, and work opportunities. This analysis approaches these related issues in its cost-benefit aspects.

46. Judy, Ricard W. "Costs: Theoretical and Methodological Issues." In Cost-Benefit Analysis of Manpower Policies, Proceedings of a North American Conference May 14-15, 1969, pp. 16-29. Edited by G. G. Somers and W. D. Wood. Published jointly by the Industrial Relations Center, Queens' University, Kingston, Ontario and the Center for Studies in Vocational and Technical Education, the University of Wisconsin, Madison, Wisconsin, 1969.

A number of conceptual and methodological issues concerning the definition and measurement of costs in cost-benefit analysis are raised and examined: (a) use of prices as measure of foregone benefits, (b) use of incremental, average and total costs, (c) problem of external costs, (d) problem of joint products, (e) constraints and shadow prices, (f) uncertainty and irreversible decisions, (g) the redistributive effects of public programs. These problems of cost measurement are often ignored in actual practice. Neat solutions do not exist. Finally, cost-benefit analysis appears to be a fairly crude tool until it is compared with available alternatives.

47. Kahan, Archadius. "Russian Scholars and Statesmen on Education as An Investment." In Education and Economic Development, pp. 3-10. Edited by C. A. Anderson and Mary Jean Bowman. Chicago: Aldine Publishing Company, 1965.

This paper introduces work by Russian statisticians and economists of the late 19th and early 20th centuries in which empirical assessments of contribution or return from formal schooling versus on-the-job training to economic productivity were attempted.

48. Kahan, Arcadicus. "The Hereditary Worker's Hypothesis and the Development of a Factory Labour Force in Eighteenth and Nineteenth Century Russia." In Education and Economic Development. Edited by C. A. Anderson and Mary Jean Bowman. Chicago: Aldine Publishing Company, 1965.

It is asserted that hereditary workers (i.e., son learning the skill of the father) were important during both the pre-industrialization phase and the early phase of industrialization when both rudimentary technical skills and industrial habits were rare in Russia.

49. Kawien, Morton I. "Interest Rate Guidelines for Federal Decision-Making." Hearing Before the Sub-Committee on Economy in Government of the Joint Economic Committee. Congress of the United States, 90th Cong., 1st sess. Washington, D.C.: Government Printing Office, 1967, pp. 145-148.

The problems involved in the choice of a rate of interest to be used for discounting future benefits and cost of government projects are discussed. According to him, the cost benefit analyst should adopt the interest rate paid on newly issued long term government bonds for the purpose of discounting future. He also maintained that both benefits and costs should be calculated after taxes.

Since evaluation is an important aspect of the economics of education-formal or non-formal, application of investment criteria in education is very significant and the choice of the appropriate interest rate plays an important role in the calculation of costs, no matter whether we adopt present value, cost-benefit ratios or internal rates of return as guides.

50. Khathtate, D. R. "Opportunity Cost and Its Application to Unemployment." Social Research, Vol. 28, No. 1 (1969), 60-70.

Opportunity costs may be interpreted in terms of what a worker would produce (i.e., his marginal product) or in terms of what he earns elsewhere. When opportunity costs are defined with reference to marginal productivity, the principle requires full employment of resources, which, in its turn, implies utilization of all alternative resources. When interpreted in terms of alternative earnings, the principle of opportunity cost becomes applicable in situations in which there are unemployment, underemployment, or disguised unemployment and at any level of marginal productivity. The alternative earnings of labor are determined by "alternative compensation" and "alternative consumption" from the viewpoint of employers and society respectively. Interpreted thus the social opportunity costs would be zero if the newly employed worker was willing to work at his previous level of consumption whereas alternative compensation of labor is always positive if the worker is even hypothetically employable. This resultant divergence may have under-estimated the need for labor intensive techniques in LDCs.

The implications of opportunity costs are important for the purpose of cost estimation of non-formal education programs.

51. Krutilla, John V. "Welfare Aspects of Benefit-Cost Analysis." Journal of Political Economy, Vol. 69, No. 3 (June, 1969), 226-235.

The main problems of cost-benefit analyses are discussed in the perspective of welfare economics. In this connection the welfare implications of changes in income distribution are considered in the light of the Kaldor-Hicks-Scitovsky-Samuelson criteria. The objective of the non-formal education may involve the achievement of improved distributional equity encompassing objectives in terms of providing equal educational opportunities, thereby shifting the distribution of income in favor of the disadvantaged. As such, this article is useful to the policy maker as a "perforated rationale."

52. Levine, Robert A. "Manpower Programs in the War on Poverty." In Cost-Benefit Analysis of Manpower Policies, Proceedings of a North American Conference, May 14-15, 1969, pp. 16-29. Edited by G. G. Somers and W. D. Wood. Published jointly by the Industrial Relations Center, Queens' University, Kingston, Ontario and the Center for Studies in Vocational and Technical Education, the University of Wisconsin, Madison, Wisconsin, 1969.

Cost-benefit analysis, at this stage, is not a very powerful tool in decision-making in manpower programs particularly in manpower programs for youth. Decisions have to be made at a fairly high level of aggregation at which cost-benefit analysis is subject to the difficulties of constructing control groups, predicting program results, and comparing results for different programs. Cost-benefit analysis can be tried, but this should not result in delaying implementation of an anti-poverty program.

The cost of formal schooling is believed to be becoming prohibitive for the poor. Non-formal education in a hierarchy of manpower programs may offer viable alternatives making futile a vigorous application of cost-benefit analysis. We will have to feel our way to an optimum program-mix rather than to select a mix through cost-benefit calculations.

53. Lewis, W. Arthur. "Economic Problems of Development." Development Research Digest, Washington, D.C., Vol. 1, No. 3 (January, 1963), 1-14.

While highlighting some of the tensions associated with development process, he discusses some of the difficulties which formal and non-formal education can help to overcome.

54. MacDonald, John S. "Costs: Theoretical and Methodological Issues: Discussion." In Cost-Benefit Analysis of Manpower Policies, Proceedings of a North American Conference, May 14-15, 1969, pp. 16-29. Edited by G. G. Somers and W. D. Wood. Published jointly by the Industrial Relations Center, Queens' University, Kingston, Ontario and the Center for Studies in Vocational and Technical Education, the University of Wisconsin, Madison, Wisconsin, 1969.

The recent intensification of social cost-benefit analyses has been predominantly econometric: a gain made at the expense of over-simplification. As applied to anti-poverty programs "there has been little analysis of incommensurables, structured rigidities, primary indirect costs and benefits, secondary costs and benefits, alternative programs, reorganization of the scope of accountability and re-compability of procedure/operator, and show-pricing." Econometric analysis by itself is necessary but incomplete in part because as a method, it tends to be politically naive. Political power should be incorporated into the model by identifying separate sectors' costs and benefits and translating them into groups' interests. "Interest groups, being the junction point of choice among resources, power and cultural values, should be more pertinent than cultural values alone. Neither the cultural values identified by sociologists nor the monetized preference scales revealed by economic analysis are homeostatic."

This is a general discussion on cost-benefit analysis but it is quite relevant to appraisal of non-formal education projects particularly in its insistence that proper comprehensive evaluation of any non-formal education project calls for the contribution of not only econometricians but also of other disciplines and techniques.

55. Machlup, Fritz. The Production and Distribution of Knowledge in the United States. Princeton, N.J.: Princeton University Press, 1962, Chapter IV, pp. 51-56.

The author deals with education in the home; in this connection, he also discusses income foregone by child-rearing mothers.

56. Mangum, Gorth L. Contributions and Costs of Manpower Development and Training. Policy Papers in Human Resources and Industrial Relations, No. 5. Ann Arbor, Institute of Labor and Industrial Relations, University of Michigan, Wayne State University, and the National Manpower Policy Task Force, 1967, p. 85.

Discusses the general problems of evaluating social programs such as lack of proper reporting systems, quantification of non-monetary benefits and costs, etc. in the context of the MDTA in its role to place the unemployed, reduce poverty, improve labor skills, and thereby meet manpower shortages, reduce inflationary pressure and revamp traditional institutions. The author concludes that benefits of MDTA are greater

than the costs. He also discusses the policy implications of various MDTA programs and stresses the need for the balance between institutional training and training-on-the job.

57. McKean, Roland N. "The Use of Shadow Prices." In Problems in Public Expenditure Analysis, pp. 33-77. Edited by S. B. Chase, Jr. Washington, D.C.: The Brookings Institution, 1968.

"Shadow prices" are those substituted for market prices when there is good reason to think the substitutes more adequately represent the "cost" than the market's evaluation. According to him, shadow prices may be derived through:

(a) programming techniques which highlight appropriate substitutions;
(b) the prices of similar goods both in internal and international markets;
(c) the prices used by other governments for similar goods; and
(d) adjusting market prices to allow for considerations which are not reflected in market prices.

"Shadow prices" are important for the purpose of benefit cost analysis. What is important is to ask which set of prices is best and most easily obtained. Market prices have the great advantages of being objective. "Shadow prices by their very nature are subjective and arbitrary. It is clear that their use in the non-formal education program should be restricted to cases in which market prices are clearly inappropriate.

58. McKechnie, Graenie H. "Manpower Mobility Programs: Discussion." In Cost-Benefit Analysis of Manpower Policies, Proceedings of a North American Conference, May 14-15, 1969, pp. 16-29. Edited by G. G. Somers and W. D. Wood. Published jointly by the Industrial Relations Center, Queens' University, Kingston, Ontario and the Center for Studies in Vocational and Technical Education, the University of Wisconsin, Madison, Wisconsin, 1969.

This comment is concerned with manpower mobility programs of Canada and related cost-benefit analysis. McKechnie feels that too often, analysts are content with traditional variables such as age, marital status and home ownership when concerned with mobility and fail to inquire into geographic involvements in sufficient depth. Personality and mobility co-efficients are useful in selecting candidates for mobility assistance, McKechnie views Jenness' method of calculating these co-efficients as inadequate. His critique is important for constructing an appropriate co-efficient in cases in which mobility is an issue--as it frequently is in non-formal education programs.

59. Merrett, A. and Allen Sykes. "Calculating the Rate of Return in Capital Projects." Journal of Industrial Economics, Vol. 9, (November 1960), 98-115.

While discussing the relative merits of conventional accounting method and methods of calculating the rate or return on capital projects, he favors internal rate of return approach for calculating the cost-benefit ratio. He maintains that internal rate of return method is relatively more accurate and less risky and offers better comparison with the return on external investments.

60. Merrett, Stephen. "The Rate of Return to Education: A Critique." Oxford Economic Papers, Vol. 18, No. 3 (November, 1966), 289-303.

This paper deals with the application of investment criteria in education with particular reference to the calculation of the rate of return as one of the criteria. In this regard he discussed the problems involved in costs and benefit estimation. After discussing the econometric difficulties involved in measuring rate of return from education, he seems to discourage the further research into the rate of return on education, with which we do not agree. In spite of the difficulties involved, we look with favor at the use of cost-benefit analysis as a guide, however crude it may be, to investment in education. This analysis is likely to bring some objectivity and scientific understanding of the problem of investment in education not only in advanced countries such as the U.S. but also in LDCs where education as a sector of the economy has to compete for funds with other sectors of the economy such as agriculture, industry and where education--formal or non-formal--is seen mostly as political good.

61. Musgrave, Richard A. "Cost-Benefit Analysis and the Theory of Public Finance." Journal of Economic Literature, Vol. 7, No. 3 (September, 1969), 797-806.

While discussing the past approaches to cost-benefit analysis, he maintains that all non-pecuniary benefits, whether internal, external, direct, indirect, tangible or intangible should be included. Though cost-benefit analysis is generally unable to solve the problem of evaluating benefits in the case of a final social good, an analysis based on arbitrary evaluation of final benefits may nevertheless be useful. Education has been treated as intermediate social good. He stressed the need for the proper level of total investment and the proper mix between private and public investment. It is pointed out that the distributional and efficiency objectives should be separated. Cost-benefit analysis can indicate the efficient investment and the distributional objectives can be satisfied by another instrument--transfer payment--subject to certain qualifications. This article provides a solid theoretical basis for evaluating non-formal education programs.

62. O, Walter. "Labor as a Quasi-Fixed Factor of Production." Unpublished PH.D. Dissertation, University of Chicago, 1961. Also published in Journal of Political Economy, December, 1962.
It is argued that the experienced worker with specific training is less likely to be laid off as a consequence of a decline in demand than untrained or even generally trained workers indicating one consequence of acquiring knowledge through non-formal education.

63. OCDE/OECD. "Education and Training." Laison Bulletin, 1968, No. 4, p. 80.
An unannotated bibliography devoted to education and training with one chapter dealing with adult education and cost-benefits in education.

64. OECD. Budgeting, Program Analysis and Cost Effectiveness in Educational Planning. Paris, 1968.
A collection of papers of a seminar devoted to studying the application of PPBS related techniques in educational planning. It is a notable contribution to the study of the difficulties in using cost benefit and cost effectiveness in decision making in the allocation and management of resources. "Investment" criteria in education are important because program evaluation is a principal component of the economics of education--formal or non-formal.

65. OECD. Employment Forecasting. Paris: OECD, March, 1963, p. 112.
While discussing mainly employment forecasting, reference is made to the part played by education--both formal and non-formal--in determining the quantity and quality of future labour supply. Examples of techniques used are drawn from Sweden, France, and the Netherlands.

66. OEEC. Forecasting Manpower Needs in the Age of Science. Paris: OEEC, 1960, p. 141.
Chapter VI deals specifically with the role of statistics in educational planning and later chapters pay much attention to the process of forecasting manpower needs. The process may be used profitably in forecasting needs in the non-formal education sector.

67. Okigbo, P.N.C. "Criteria for Public Expenditure on Education." In Economics of Education, pp. 479-496. Edited by E.A.G. Robbinson and J. E. Vaizey. Proceedings of a conference held by the International Economic Association. New York: Macmillan, 1966.
The article discusses the criteria for public expenditure on education in a general way with reference to the Nigerian experience. A rough calculation of the cost-benefit relations is suggested as a crude guide in the absence of any other alternative criteria.

68. Papi, G. U. "General Problems of the Economics of Education." In Economics of Education, pp. 3-23. Edited by E.A.G. Robbinson and J. E. Valzey. Proceedings of a conference held by the International Economic Association. New York: Macmillan, 1966.

Although this does not relate formal schooling to the broader aspects of human resource development as a whole through non-formal education, the article discusses in general terms consequences of investment in human potential, demand for and supply of educational services along with some methodological comments with evident applicability for non-formal education.

69. Parnes, Herbert S. "Manpower Mobility Programs: Discussion." In Cost-Benefit Analysis of Manpower Policies. Proceedings of a North American Conference, May 14-15, 1969, pp. 16-29. Edited by G. G. Somers and W. D. Wood. Published jointly by the Industrial Relations Center, Queens' University, Kingston, Ontario and the Center for Studies in Vocational and Technical Education, the University of Wisconsin, Madison, Wisconsin, 1969.

In discussing a manpower mobility program, Parnes explains the role of cost-benefit analysis in programs where precision in quantification is not possible. He argues that where the nature of the problem precludes precise quantification of the benefit-cost ratio, it would be better not to strain to arrive at one. "The chief danger is not that the effort will have been wasted; it is that the expenditure of so much effort may cause us to want to use the result." So far as benefit-cost analysis per se is concerned, its chief contribution to decision-making lies in the comprehensive view of the issue that it requires rather than in the benefit-cost ratio it produces. This approach of evaluation of non-formal education seems to be appropriate simply because non-formal educational output is a complex social product where precise quantification of socio-cultural and socio-economic variables are not simply possible.

70. Popensoe, Oliver. "Education as Investment." In Development Digest. Edited by P. N. Schwartz for USAID, Washington, D.C. Vol. 6, No. 1, January, 1968.

Education can be functional and/or dysfunctional in economic or political development. Planning must attempt to maximize returns from education and ensure that educational expansion does not exceed the ability of the economy to absorb its products. There is also a tendency to "oversell" education. The warning is clear for both traditional and non-formal education.

71. Prest, R. A. and R. Turvey. "Cost-Benefit Analysis: A Survey." Economic Journal, Vol. 75, No. 300 (December, 1965), 603-735.

This is an excellent survey article. In enumerating costs and benefits, the definitions of a "project," "externalities," "secondary benefits" and "project life" are examined. It discusses cost-benefit analysis under the following headings: choice of interest rate; relevant constraints; investment criteria and second-best matters; application to water projects; application to transport project; application to land usage programs; application to health programs; application to investment in education; application to other fields, e.g., defense, research, and development. The bibliography provides an important list of reference works. This is a useful guide to those concerned with the application of decision criteria in non-formal or formal education programs.

72. Raynauld, Andre. "Costs: Theoretical and Methodological Issues: Discussion." In Cost-Benefit Analysis of Manpower Policies, Proceedings of a North American Conference, May 14-15, 1969, pp. 16-29. Edited by G. G. Somers and W. D. Wood. Published jointly by the Industrial Relations Center, Queens' University, Kingston, Ontario and the Center for Studies in Vocational and Technical Education, the University of Wisconsin, Madison, Wisconsin, 1969.

It is both unnecessary and dangerous to concentrate too much on the theory of cost-benefit analysis which is a down-to-earth technique for decision-making. Decisions are often made and large sums spent on no measured basis whatsoever. It is not enough for manpower programs to reduce unemployment, but that they must do so efficiently. Since the private market does not provide extensive training, placement and relocation services, this market imperfection justifies the government intervention. Turning to wider issues, especially in a re-distribution framework, transfer payments and manpower programs may be viewed as alternative methods of achieving a given goal with one objective and several alternatives to achieve it, then the evaluative task is relatively easy. Discussing "second-best" decision rules leads to consideration of transfer payments which cannot be added to real benefits, but do affect the private behavior and calculations of the beneficiaries. This effect may contribute substantially to the alledged imperfections of the market. If individuals do include transfer payments along with foregone earnings, public retraining programs will have to be more generous, and the program is likely to appear much less efficient. This discussion clarifies some important methodological issues in project evaluation.

73. Reder, M. W. "Gary Becker's Human Capital" A review article, Journal of Human Resources, Vol. 2, No. 1 (Winter, 1967), 97-104.

It is argued that a primary objective of Becker's theoretical analysis is to explain the determinants of the rate of return to human capital as he argues that absolute wage differences determine the return on investment in skills and other knowledge. Reder feels that rate of return to human capital depends on the relation of the wage of trained labor to the prices of all inputs used in its production and not to that of unskilled labor alone. Becker's analysis of specific job in a specific industry causes some difficulty. Because, even in equilibrium position an employer can quit the job or employer can discharge the employee and thereby disturbing the equilibrium position. This suggests that there is a zone of bargaining not explored by Becker. Finally, he suggested that Becker might have given more extensive treatment to the concept of vintages of human capital.

74. Reitere, Stanley. "Choosing an Investment Program Among Interdependent Projects." Review of Economic Studies, Vol. 30 (February, 1963), 32-36.

The analytical techniques needed to solve the problem of choosing a project out of possible combinations of projects is discussed. The procedure for finding an optimal program which makes the largest pay off is also illustrated.

This article has not mentioned anything about non-formal education in particular, but it is useful because non-formal education is a substitute for and complement to formal education and programs may be interdependent.

75. Ripman, Hugh B. "International Financing of Educational Investment." In The Economics of Education, pp. 591-602. Edited by E.A.G. Robbinson and J. E. Vaizey. Proceedings of a Conference held by the International Economic Association. New York: Macmillan, 1966.

The paper discusses the principles/criteria for World Bank/IDA financing education and training projects--principles which are generally applied by the Bank for appraisal of other types of projects.

76. Rosenberg, L. C. "On Costs and Benefits of a National Television System for India." Indian Economic Journal, Vol. 14, No. 1 (July-Sept., 1966), 1-17.

The cost benefit of a national television system for India is discussed under the following main headings: methodology; technology, and system costs; potential net benefits from national TV. Costs associated with the programming and reception should be common to all systems. As far as the transmission is concerned he found that of the

three (airborne transmission, satellite transmission and ground broadcasting with micro-wave links), satellite is the least costly method of transmission. Two kinds of potential benefits are also considered: one is for formal education and the other for non-formal education. The social and economic implications of the use of TV and radio, etc., is far-reaching: first, to reduce the pressure on over-crowded class-rooms, thereby improving the quality of formal education; second, to broaden the educational base of the LDCs where in most cases 80% of the people are still illiterate; and third, to match learning with the world of work and reduce economic wastage resulting from dropouts.

77. Schultz, Theodore W. Investment in Human Capital. New York: The Free Press, 1971, pp. 48-61.

In this volume Schultz addresses himself to two areas neglected by economists: investment in human beings and research. The stress is on formal education and organized research, yet his discussion of "the concept of human capital" is particularly relevant for non-formal education.

78. Scitovski, Tibor. "Two Concepts of External Exonomics." Journal of Political Economy, Vol. 62, No. 2 (April, 1954).

Non-market interdependence and its implications for equilibrium theory are discussed. He argued that in a technological society, external economies can arise because of a result of direct interdependence of producers and within the framework of general equilibrium theory. But in the case of the LDCs, this problem can arise because of the problem of allocating scarce resources among competing alternative investments opportunities.

This is an important article in the sense that any cost benefit analysis of non-formal education must be alert to the existence of external economics.

79. Sewell, David O. "Evaluating Manpower Programs for the Disadvantaged." In Cost-Benefit Analysis of Manpower Policies, Proceedings of a North American Conference, May 14-15, 1969, pp. 16-29. Edited by G. G. Somers and W. D. Wood. Published jointly by the Industrial Relations Center, Queens' University, Kingston, Ontario and the Center for Studies in Vocational and Technical Education, the University of Wisconsin, Madison, Wisconsin, 1969.

This discussion is concerned with the published benefit cost studies of Manpower Development and Training Act (MDTA) type training programs. The evaluation is essentially negative: "In the first place, it is doubtful whether the results from past studies have much relevance to the current MDTA program. Secondly, it is entirely possible that the return to training claimed to have been revealed in these studies include the returns to ability, intelligence, and

job-placement activities of the authorities conducting training. Finally, while trainees undoubtedly benefited from participation in many of the training courses studied, such benefits may have been achieved at the expense of non-participants in these programs and it is entirely questionable whether any benefits from the training accrued to society in the form of increases in aggregate output. Whether current benefit-cost analyses of MDTA-type training programs for the disadvantaged will remedy the defects of past analyses and demonstrate that such training is a worthwhile investment to society on efficiency grounds remains to be seen."

Since many job oriented programs are conducted through non-formal educational mode, this critique is important for developing evaluative techniques for non-formal education programs.

80. Shaffer, Harry G. "Investment in Human Capital: Comment." American Economic Review, Vol. 51, No. 5 (December, 1961), 1026-1039.

The capital concept should not be applied to man, because it is not possible to distinguish between expenditures intended for investment and consumption. Besides, it is difficult to show that income differentials are due to the differences in the levels of education because other factors like intelligence, social status, connections, parents' occupation, etc. influence the income differentials. The criticism was evidently not totally destructive.

81. Smolensky, Eugene. "Investment in the Education of the Poor: a Pessimistic Report." American Economic Review, Vol. 56, No. 2 (May, 1966), 374-376. Papers and proceedings of the American Economic Association, New York.

While discussing full employment and declining wage differentials, he argued that the wage differential between skilled and unskilled workers reflects the return to investment in training. In a purely competitive market, workers would shift from unskilled to apprentice-trainee occupations, lowering the marginal value product and hence the wage rate of trainees. Eventually, equilibrium would be reached. The wage differential between skilled and trainees would yield a return on the investment in training (foregone income in the unskilled and trainee wages plus any direct training costs). The money wage of trainees and apprentices would be below the wage rate of the unskilled as the employee would pay the full cost of training.

82. Somers, Gerald G. "Re-training: An Evaluation of Gain and Costs." In Employment Policy and the Labor Market, pp. 271-298. Edited by A. M. Ross. Berkeley: University of California Press, 1965.

Criteria for evaluation of the gains of retraining are discussed. It is argued that retraining may provide gains in productivity measured in terms of employment earnings and social gains measured in terms of decrease in the welfare payment and consequent increase in government revenue in the form of tax. Despite the difficulties involved in measuring the costs, total benefit from retraining may well exceed the costs. This article is useful because on-the-job training constitutes an important part of the effort to increase the earning of the poor.

83. Stromsdorfer, Ernst W. "Evaluating Manpower Programs for the Disadvantaged." In Cost-Benefit Analysis of Manpower Policies, Proceedings of a North American Conference, May 14-15, 1969, pp. 16-29. Edited by G. G. Somers and W. D. Wood. Published jointly by the Industrial Relations Center, Queens' University, Kingston, Ontario and the Center for Studies in Vocational and Technical Education, the University of Wisconsin, Madison, Wisconsin, 1969.

Benefits are more difficult to deal with in theoretical and empirical terms than are costs. But there are also areas in cost analysis which are difficult to treat in both practical and theoretical terms. They involve more than just straightforward cost accounting, viz. costs are benefits foregone and vice-versa. The author expands two major problem areas: the treatment of capital costs and of joint costs under the following headings: capital costs; problem of evaluation; the capital recovery factor; the joint cost problem; costs and benefits to government units; negative cost-benefit ratios; the multiplier effect; vacuum and displacement effect.

The discussion of the complexities of capital costs and of joint costs contributes to understanding the cost components of non-formal education. He suggests four alternative means for valuing existing capital stock: (a) use no social opportunity costs, (b) use historical costs, (c) use replacement costs, (d) use an estimate of current assessed valuation. None is entirely satisfactory.

84. Strumilin, S. G. "The Economic Significance of National Education." In Economics of Education, pp. 276-323. Edited by E. A. G. Robbinson and J. E. Vaizey. Proceedings of a Conference held by the International Economic Association. New York: Macmillan, 1966.

The economic significance of both formal and non-formal education with special reference to the USSR is discussed.

85. Thomas, Brinley, J. Moxham and A. G. Jones. "A Cost Benefit Analysis of Industrial Training." British Journal of Industrial Relations, Vol. 7, No. 2 (July, 1969), 231-264.

The costs and benefits to an individual firm arising out of both specific programs of instruction and "learning by doing" are discussed using the data drawn from a British firm. They classify the costs and the benefits and favor the inclusion of both fixed and variable costs. They maintain that benefits are to be measured by the higher output performance, net increase in income and consequent decrease in labor turnover. They demonstrate this by giving a cost benefit analysis of an operative training scheme introduced in a Yorkshire firm. The training given was "general" rather than "specific" and the firm bears the cost of the training to a great extent. This empirical analysis runs contrary to Becker's theory of "general" and "specific" training. According to Becker, the trainees bear the cost of the general training in a competitive market, because he argued that it is not in the interest of the firm to impart "general training" to the workers.

86. Thomas, T. "Returns from Investment in Human Capital." American Economic Review, Vol. 60, No. 4 (September, 1970), 546-559.

The objective of this paper is to develop a model which will predict lifetime earnings. The model is developed by representing an individual's investment in human capital as a continuous process rather than a series of discrete investments. It includes a base earning capacity which is considered to be the return on the mutual endowments of human resources at the time individual makes the decision to invest in human capital. Investments in human capital are then measured in terms of the fraction of earning capacity which is foregone at each moment in time. In addition, depreciation of human resources and autonomous growth in earnings with time are included in the model in general functional form. The basic model is an integral equation which is solved for the age profile of earning capacity. Of course, if depreciation of human resources and autonomous growth are of the same functinnal form, then their effects will be confounded, if only a single cross-section of earning data is used. In order to distinguish the effects of the rate of return and investment in on-the-job training, it is assumed that the rate of return is the same for all investment in human capital.

87. Turvey, Ralph. "Present Value versus Internal Rate of Return--An Essay in the Theory of the Third Best." Economic Journal, Vol. 73, No. 289 (March, 1963), 93-98.
Does not discuss non-formal education specifically, but it is useful, since the author discusses two important decision criteria. Turvey notes that the correctness of any investment criterion can be discovered by examining its consistency with the maximand or minimand. In a command economy, where the rate of growth of assets is fixed prior to implementation of the program (e.g., Russian economy) the internal rate of return approach is perhaps appropriate, because time preference and social discount seem too irrelevant. But he is inclined to favor the present value approach over the internal rate of return in view of the fact that the policy maker is not generally indifferent to the relative degree of futurity of costs and benefits.

88. UNESCO. Manual of Educational Statistics. Paris: UNESCO, 1961, p. 241.
The book discusses and illustrates the special problems of statistics of illiteracy, educational attainment, institutional levels and types of achievement, and finance.

89. Vaizey, John. "Criteria for Public Expenditure on Education." In The Economics of Education, pp. 451-462. Edited by E.A.G. Robbinson and J. E. Vaizey. Proceedings of a Conference held by the International Economics Association. New York: Macmillan, 1966.
Various criteria by which desirable levels of public expenditure on education in general could be decided are discussed. Although the author did not mention non-formal education as such, it is useful because criteria developed could be applied to non-formal education sector as well.

90. Weisbrod, Burton A. "Investing in Human Capital." Journal of Human Resources, Vol. 1, No. 1 (Summer, 1966), 5-21.
Health and education as investments are discussed in their diversity and complexity. He develops a policy package for educational investment in human capital including better communication with the people about the long-run benefits from investment in education, expansion of public sector programs until marginal social costs equal marginal social benefits, reorientation of tax policy to remove the imbalance between investment in physical assets and investment in human capital, etc. An important article in the area of the economics of education, but it does not deal specifically with non-formal education.

91. Weisbrod, Burton A. External Benefits of Public Education. Princeton: Industrial Relations Sections, Department of Economics, Princeton University, 1964, p. 143.

Discusses the benefits of education and their spill-overs and their geographic dispersion. This is related to the allocation of resources with particular reference to the very mobile U.S. population. He argues that educational expenditures may be increased to compensate for the less than socially optimal expenditure due to spill outs. Traditional economic remedies such as subsidizing the producer of the external benefits and establishing minimum standards of performance are discussed.

Educational expenditures for non-formal education in the context of the LDCs may very well retard the process of geographic dispersion of spill-over of educational capital in the sense that internal immigration from rural to urban cities may be slowed down.

92. Weisbrod, Burton A. "Benefits of Manpower Programs: Theoretical and Methodological Issues." In Cost-Benefit Analysis of Manpower Policies, Proceedings of a North American Conference May 14-15, 1969, pp. 16-29. Edited by G. G. Somers and W. D. Wood. Published jointly by the Industrial Relations Center, Queens' University, Kingston, Ontario and the Center for Studies in Vocational and Technical Education, the University of Wisconsin, Madison, Wisconsin, 1969.

The following conclusion of the author gives a fairly good account of the article: "Benefits from manpower programs or any other governmental program may be judged in terms of the program objectives. While these objectives are stated in a wide variety of ways, they involve generally the achievement of (1) greater allocative efficiency, (2) enhanced economic stability (less inflation and less unemployment), and (3) improved distributional equity. The major point of this paper is that manpower programs may, but are not likely to, produce benefits in either of the first two forms that exceed costs. Any evaluation of a manpower program should begin, therefore, with the presumption that the program is not economically efficient in the sense that benefits in the form of increased worker productivity (as measured by earnings) exceed the real cost of the program. Perhaps the program would be found efficient if external benefits were taken into account, but measurement of these benefits is very difficult, and the active presence of private firms in providing training programs and workers. Placement suggests-but does not prove-that these externalities are not of major significance. If government manpower programs are to be justified at all, it will often be necessary and proper that weight be given to their income distributional groups of individuals. The critical question is: How much "weight?" The determination of this "weight" is extremely difficult in the case of

non-formal education programs. This type of program produces social product and consequent social concern. This involves the question of distribution income and there benefits pertaining to size, age, race and area. So it may be self defeating to try to abide by all the theoretical requirements of cost-benefit analysis in concrete situations."

93. Weisbrod, Burton A. "Conceptual Issues in Evaluating Training Programs." Monthly Labor Review, Vol. 89, No. 10 (October, 1966), 1091-1099.

Benefit-cost relationships in manpower financing are discussed. The goals of manpower training programs are to increase earnings and decrease unemployment. If there are no effects on third parties, then we can evaluate the effectiveness of the program by comparing the income of trainee and non-trainees subject to appropriate use of a control group which is not always easy. But the presence of third-party effects complicates the evaluation process especially when manpower training programs make a "breakthrough" and thereby generate employment and income streams among other workers. This does not specially treat non-formal education, but the application is evident.

94. Wilkinson, Bruce M. "Present Values of Lifetime Earning for Different Occupations." Journal of Political Economy, Vol. 74, No. 6 (December, 1966), 556-572.

The author maincains that the present values of lifetime incomes influence the choice among occupations. Discounted returns for different levels of education and various occupations are discussed. Using data from 1961 Canadian census he stresses that it is the ability of the persons which accounts for differences in present values of lifetime incomes, and he found out that both formal and non-formal education (e.g., on-the-job training) tend to be correlated with ability.

95. Wykstra, Ronald A., ed. Education and the Economies of Human Capital. New York: The Free Press, 1971, Part I, pp. 23-89.

Part I deals with some basic concepts: the development of human capital, returns from investment in education, relationship between growth and education, and methodology of cost and return comparison. This has an important bearing with non-formal educational investment and return.

96. Zucker, Albert. "A Note on the Declining Tendency with Age for Investment in Human Capital." Journal of Human Resources, Vol. 2, No. 4 (Fall, 1967), 538-540.

Because of mortality, investment in a particular human has special risks which increase rapidly with age. Further, much investment is less tangible in result and frequently involves a long gestation period and other characteristics which distinguish it from traditional "investment." Attempts are made to incorporate this into calculation of value. Non-formal education is not specifically the topic, but the material is evidently relevant.

B. GENERAL LITERATURE - NON-FORMAL EDUCATION

B. GENERAL LITERATURE - NON-FORMAL EDUCATION

See also entry No. 19.

97. Anderson, C. A. "Non-Formal Education: Fostering and Inhibiting Factors." In New Strategies for Educational Development, pp. 25-35. Edited by Cole S. Brembeck and Timothy J. Thomson. Lexington, Mass.: D. C. Heath and Company, 1973.

In this paper non-formal education is discussed under the following headings:

(a) the demography of primary-school leavers;
(b) how education fits into development;
(c) the tenuous association between education and occupation;
(d) regulating the flow of non-formal education through use of economic signals;
(e) non-formal education offers the best linkage with social traditions;
(f) non-formal education favors an unpoliticized teaching corps;
(g) drawbacks to ruralized schools.

98. Armytage, W. H. C. "Education and Innovative Ferment in England 1588-1805." In Education and Economic Development, pp. 376-393. Edited by C. A. Anderson and Mary Jean Bowman. Chicago: Aldine Publishing Company, 1965.

Discusses, among other things, how the diffusion of ideas took place in England between 1588 and 1805 through non-formal education in the coffee or tea house.

99. Batten, T. R. School and Community in the Tropics. London: Oxford University, 1959, p. 117.

This is a study, using examples from many countries, of schools in relation to local needs--the community approach to education, which relates it to development.

100. Bereday, G. Z. "School Systems and Mass Demand: A Comparative Overview." In Essays on World Education: the Crisis of Supply and Demand, pp. 93-110. Edited by G. Z. Bereday. New York: Oxford University Press, 1969.

Formal schooling is attacked. It is argued that under-production occurs since school systems are restrictive and repressive. Dropouts from formal school are dropins to the informal schooling network ranging from jet-airline pilot training to fine arts; from beautician schools to schools of

egg production in the United States indicating the range of educational provisions which the necessities of life have brought into being.

101. Bereday, G. Z., ed. Essays on World Education: The Crisis of Supply and Demand. New York: Oxford University Press, 1969, pp. 312-359, Appendix.

A portion of the essays deals with the sub-topic: "Enlargeing Education: Recommendations." This portion is designed to stimulate and map out new roads for advances in education, productivity and non-formal education. A part deals specifically with educational resources.

102. Bowman, Mary Jean. "Perspectives on Education and Development." In Human Capital Formation and Manpower Development, pp. 425-434. Edited by Ronald A. Wykstra. New York: The Free Press, 1971.

It is argued that manpower and educational planning, as currently practices, tend to be rigid technical bookkeeping processes which too frequently fail to recognize the proper role of outside school learning which can be complementary to and substitutes for formal learning through schools.

103. Brembeck, Cole S. "The Strategic Uses of Formal and Non-Formal Education." In New Strategies for Educational Development: The Cross-Cultural Search for Non-Formal Alternatives, Chapter 5. Edited by Cole S. Brembeck and Timothy J. Thompson. Lexington, Mass.: D. C. Heath, 1973.

The paper inquires into the structural characteristics of formal and non-formal learning in order to assess their capabilities to perform educational tasks. The perspective is sociological in that it concerns the characteristics of social organization of two modes of learning and these characteristics upon people who participate in them. Hence its importance for development planning for non-formal education sector.

104. Calcutta Metropolitan Planning Organization (CMPO). "An Urban Community Development Program." Development Digest. Edited by P. N. Schwartz for AID, Washington, D.C., Vol. 4, No. 4 (January, 1967).

The outline of an urban community program refers specifically to the needs of the Calcutta metropolis, but its emphasis on mobilizing existing community voluntary organizations and other productive resources have implications for many other urban areas and non-formal education.

105. Callaway, Archibald. "Frontiers in Out-of-School Education." In New Strategies for Educational Development: The Cross-Cultural Search for Non-Formal Alternatives. Edited by Cole S. Brembeck and Timothy J. Thompson. Lexington, Mass.: D. C. Heath, 1973.

Discussing the various characteristics of non-formal education, the writer maintains that the present determination to explore the processes of out-of-school education derives mainly from experiences during the 1960s: realization of the inability of formal education to provide school places for rising populations creating the possibility of increasing unemployment among school leavers.

106. Coombs, P. H: The World Educational Crisis, A System Analysis. New York: Oxford University Press, 1968, p. 226.

An excellent overview of the present situation in world education. He advocates specific techniques and programs aimed at modernizing educational management curriculum, teacher training, and teaching method--combined with a massive strengthening of non-formal education.

107. Coombs, P. H. "The Education Industry." Development Digest. Edited by P. N. Schwartz for AID, Washington, D.C., Vol. 6, No. 1 (January, 1968).

Although education is not an "industry," in the usual sense, it is an "industry" in that it employs costly resources to produce results of value. Therefore, it should be concerned with using its limited resources as efficiently and productively as possible, in the interest of giving as many people as possible the best education. There are several guidelines to improve both the pedagogical and cost efficiency of educational systems with clear implications for non-formal education.

108. Coombs, P. H. "How Shall We Plan Non-Formal Education." In New Strategies for Educational Development: The Cross-Cultural Search for Non-Formal Alternatives, Chapter 12. Edited by Cole S. Brembeck and Timothy J. Thompson. Lexington, Mass.: D. C. Heath, 1973.

The paper paid attention to: (1) critical shortcomings of educational planning as presently practiced; (2) important features of out-of-school education that differentiates it from formal education and condition its planning; (3) logical steps required in planning out-of-school education; and (4) a few hypotheses about the potential productivity of out-of-school education.

109. Curle, A. World Campaign for Universal Literacy, Comment and Proposal Center for Studies in Education and Development. Graduate School of Education, Harvard University, Occasional Papers, No. 1. Cambridge, Mass.: CSED, 1964, p. 40.
A critique of the Current World Campaign for Universal Literacy sponsored by UNESCO indicating the need for concentrating on the literacy of the labor force, rather than of the whole population.

110. Curle, A. Educational Strategy for Developing Societies. London: Tavistock Publications, Ltd., 1963, p. 180.
The role of education in general in the transformation of less developed societies is discussed. Economic development is seen as a part of the transformation process. This is useful in understanding the role of non-formal education also.

111. Deleauvais, Michel. "The Balance Between the Different Levels of Education." In Economics of Education, pp. 523-546. Edited by E.A.G. Robbinson and J. E. Vaizey. Proceedings of a Conference held by the International Economic Association. New York: Macmillan, 1966.
Although the article is concerned with measurement of different levels of formal education--primary, secondary and higher education--methods used in calculating an overall index may be of use to measurement in non-formal education.

112. Doyle, Louis A. "Continuing Education--Nsukka--A Program of University Extension Acquired at Serving the Practical and Intellectual Needs of a Developing Nation." Continuing Education Center, University of Nigeria, Nsukka, n.d., p. 64.
The roots of the continuing education program linking the University and the community are traced and the program itself is described. The paper concludes by relating the University of Nigeria's continuing education program to other programs in Nigeria and elsewhere in Africa.

113. Easterelin, Richard A. "A Note on the Evidence of History." In Education and Economic Development, pp. 422-430. Edited by C. A. Anderson and Mary Jean Bowman. Chicago: Aldine Publishing Company, 1965.
The need for further research of the relations between specific forms of formal and informal education and spread of specific innovations as well as further disaggregation technician formal and non-formal education are stressed.

114. Eugeret, M. "New Trends in Polytechnical Education with Special Reference to Planning of Manpower Demand in the Long Run." (Experience from the German Democratic Republic). Cairo: Institute of National Planning, May 15, 1963, p. 12 (Memo. No. 307).

An explanation of the new emphasis on the vocational element in education, designed to lead school pupils into occupations relevant to national manpower requirements. There are some implications for non-formal education.

115. Evans, Ruper N. Foundations of Vocational Education. Columbus, Ohio: Charles E. Merrill Publishing Co., 1971, Chapters 7, 8.

Here the economic and sociological foundations of vocational education are discussed. The discussion is suggestive for non-formal education. For example, he treats in some detail "why learning an occupation on-the-job frequently takes many years." Though his emphasis is on the sociological aspect of the problem, yet it has its economic significance in that the cost-benefit analyst should be aware of a behavior of a work group. The implication for non-formal education is evident: ". . . Most vocational course content concentrates almost exclusively on technical skills and pays little attention to the social skills of work. Even if the course outline includes provision for teaching social skills, it is almost essential that the teacher have recent, direct, personal contact with the occupation, if he is to provide effective instruction in these skills. Many clues to correct social action in the work group are so subtle that a person who does not know them intimately may teach incorrectly. Fortunately, work social groups are quite similar to student social groups in the vocational education laboratory, and students can and do learn from each other. Many of these learnings cannot take place, however, in the standard classroom."

116. Fourre, Pierre. Adult Education Techniques in Developing Countries--A Greek Case Study. Paris: OECD, n.d., p. 137.

An account of adult education methods used in Greece and experiences with them.

117. Grandstaff, Marvin. "Are Formal Schools the Best Place to Educate?" In New Strategies for Educational Development: The Cross-Cultural Search for Non-Formal Alternatives, Chapter 4. Edited by Cole S. Brembeck and Timothy J. Thompson. Lexington, Mass.: D. C. Heath, 1973.

The notion of "needs" is central to the question of location of function. It is the "needs" of social groups that determine the use of educational objectives in practice. He maintains that had the educational objectives posed by industrialization been located in available non-formal agencies, the shape of education and perhaps of society

generally would have been profoundly different. He stressed the need for studies which might be drawn from a three-way matrix with the following dimensions: (1) type of educational objectives (political, occupational, valuative, cultural, etc.); (2) type of non-formal agency (family, worker's association union, health professionals, church, youth groups, etc.); and (3) context of data collection (historical period, cultural group, geographical creation, social group, etc.). Such studies might test the workability of the concept of "need" as analytic and descriptive tool in the context of development and change.

118. Griffin, Willis H. "A Land Grant University's Program in Appalachia." In New Strategies for Educational Development: The Cross-Cultural Search for Non-Formal Alternatives, Chapter 17. Edited by Cole S. Brembeck and Timothy J. Thompson. Lexington, Mass.: D. C. Heath, 1973.

Here the author maintains that "for more than 50 years, the cooperative extension service of the University of Kentucky has provided county agricultural, home demonstration, and 4-H agents to carry out non-formal educational programs. This effort brought the results of research and knowledge from campus to farm throughout Kentucky; it identified problems of rural Kentucky and referred them back to the teaching and research programs on campus," thereby integrating the formal education responsibilities of a university with its non-formal education potentials as they related to an underdeveloped area.

119. Ginzberg, E. and D. W. Bray. The Uneducated. New York: Columbia University Press, 1953, 246 p.

This study moves from a review of educational developments in the U.S. to a review of the facts about illiteracy discovered during World War II. The second section of the book presents a unique body of case material designed to reveal the ability of the poorly educated to perform effectively in a military organization once they have acquired literacy.

120. Gross, Ronald and Beatrice, eds. Radical School Reform. New York: Simon and Schuster, 1969, p. 348.

Contains a collection of bold and provocative essays criticizing formal schooling and suggesting alternatives in education.

121. Hansen, W. Lee, B. A. Weibrood and W. J. Scanlon. "Determinants of Earnings. Does Schooling Really Count?" Mimeographed. Economics of Human Resources working paper. Madison: Department of Economics, University of Wisconsin, April, 1968, p. 29.

It is not merely the formal schooling but the total learning experience that explain the individuals' earning differentials thereby recognizing the role of non-formal education in income differentials. The authors tested this hypothesis taking a sample of 2500 men who failed the armed forces qualification test (AFQT). While developing the model for earning determinants they took into consideration the explanatory variables such as physical condition; mental capability, learning and experience, family background and so on.

122. Harbison, F. H. and G. Seltzer. "National Training Schemes." In New Strategies for Educational Development: The Cross-Cultural Search for Non-Formal Alternatives, Chapter 16. Edited by Cole S. Brembeck and Timothy J. Thompson. Lexington, Mass.: D. C. Heath, 1973.

A central issue in educational human resource planning is the extent to which responsibility for the development of specific skills can be placed upon employing institutions. The planner is faced with questions such as these: What kinds of skills are best developed off-the-job or at the work place? Who should bear the costs of such skill training? Many developing countries in the world are deeply concerned with these questions. This paper sketches briefly three approaches. The first is the Latin American type program which is now well established in Brazil, Chile, Peru, Colombia, and Venezuela and is being extended in most other countries in the area. The paper describes the program in Colombia (SENA) which has been in operation for fourteen years. The second is the approach of the industrial training act in 1964 in the United Kingdom. The third is a modification of the UK program which is being initiated in Kenya. In all three cases, training is financed through levies on employing institutions, and all are separated from the formal systems.

123. Hardin, Einar. "The Economic Evaluation of Non-Formal Education." In New Strategies for Educational Development: The Cross-Cultural Search for Non-Formal Alternatives, Chapter 13. Edited by Cole S. Brembeck and Timothy J. Thompson. Lexington, Mass.: D. C. Heath, 1973.

The paper sets forth the results of economic evaluations of some non-formal education in the United States and relates the methodology and results to non-formal education in poor countries.

124. Hilliard, John F. "Elements of an Action Program." In New Strategies for Educational Development: The Cross-Cultural Search for Non-Formal Alternatives, Chapter 2. Edited by Cole S. Brembeck and Timothy J. Thompson. Lexington, Mass.: D. C. Heath, 1973.

While discussing the various elements of an action program in non-formal education, educational requirements and the possible cost of a system of non-formal education are discussed.

125. Hopkins, P. G. H. What Role Should Adult Education Play in the Process of Economic Development? Nyasaland: Nyasaland Economic Symposium, July, 1962, p. 19.

An illuminating discussion of the importance, nature, content and economic benefits of adult education with particular reference to African conditions.

126. Hunter, Guy. "Education and Economic Opportunity in Africa." In Development Digest. Edited by P. N. Schwartz for AID, Washington, D.C., Vol. 8, No. 4 (October, 1970).

African countries are educating more people to higher levels of expectations than can be accommodated by present economic opportunities. The system is overly oriented toward its limited top level. Development requires inter alia, more emphasis on educated adult producers, and sub-university technicians, more attention to primary school leavers and greater reliance on private resources. In this connection, non-formal education is stressed.

127. IBRD. Education. Sector Working Paper, World Bank, Washington, D.C. September, 1971, pp. 19-26.

The paper discusses the world bank non-formal education phases and operations in the 1970s, like possible new areas of lending, programmed learning project design, sector analysis and the like.

128. Illich, Ivan. "The De-Schooling of Society." In Alternatives in Education. OISE 5th Anniversary Lectures. Edited by Bruce Rusk. The Ontario Institute for Studies in Education, Canada, 1971, pp. 103-126.

The author is highly critical of formal schooling, indicating why and how the society can be de-schooled. He maintains that the child grows up in a world of things surrounded by people who serve as models for skill and values. He finds peers to challenge him to argue, to compete, to cooperate, and to understand; and if the child is lucky, he is exposed to confrontation of criticism by an experienced elder who really cares. Things, models, peers, elders are resources, each of which requires a different type of arrangement or network readily available to the public and designed to spread equal opportunity for learning and teaching. The cost-benefit analysis is of particular interest.

129. Inkles, Alex. "The Role of Occupational Experience." In New Strategies for Educational Development: The Cross-Cultural Search for Non-Formal Alternatives, Chapter 7. Edited by Cole S. Brembeck and Timothy J. Thompson. Lexington, Mass.: D. C. Heath, 1973.

The factory can be a school--a school for modernization. The main findings suggest that the classroom still leads the workshop as a school of modernization in the ratio of 3:2. Using the stricter test which utilizes factory workers only, grouped by length of industrial experience, individuals every additional year in school produce three times as much increment in individual modernization scores. The school seems clearly to be a more efficient training ground for individual modernization. Nevertheless, we should keep in mind that school has the pupil full time and that it produces no incidental by-products other than its pupils. By contrast, the main business of the factory is to manufacture goods, and the changes it brings about in men (not insubstantial) as we have seen are secured at virtually zero marginal cost. These personality changes in men are, therefore, a kind of windfall profit to a society undergoing the modernization process.

130. Jeffries, Charles. "Illiteracy, A World Problem." In Development Digest. Edited by P. N. Schwartz for AID, Washington, D.C., Vol. 6, No. 1, January, 1968.

In spite of several UNESCO efforts, illiteracy continues to be a problem of serious nature in LDCs. The number of illiterates rose by something like 200 million from 1962 to 1967. This deficit can be overcome by planned government programs through non-formal education. Even though this is a fairly recent notion, the social, political and economic structure of the modern community rests on the assumption that every citizen can communicate, and be communicated with by means of the written or printed word.

131. Kahan, Arcadicus. "The Hereditary Workers Hypothesis and the Development of a Factory Labour Force in Eighteenth and Nineteenth Century Russia." In Education and Economic Development, pp. 291-297. Edited by C. A. Anderson and Mary Jean Bowman. Chicago: Aldine Publishing Company, 1965.

The hereditary workers phenomenon was important during both the pre-industrialization phase and the early phase of industrialization when both technical skills and industrial skills were rare in Russia.

132. Kandel, I. L. "Comparative Education and Underdeveloped Countries: A New Dimension." Comparative Education Review, Vol. 4, No. 3 (February, 1961), 130-135.
The need for an imaginative approach to the content of educational planning both formal and non-formal is stressed in order to be of most use to economic development.

133. Kelley, S. C. "The Role of Incentives in Human Resource Planning." In Planning Education for Economic and Social Development, pp. 27-37. Paris: OECD, 1963.
The need for incentives in human resource planning to make it successful in overcoming the inertia of a traditional society is discussed.

134. Kidd, J. R. The Implications of Continuous Learning. Toronto: W. J. Gage Ltd., 1966, p. 122.
Lectures by a leading Canadian adult educator, in which he advocates life long integrated education for all and discusses the implications.

135. King, J. Planning Non-Formal Education in Tanzania. The International Institute of Educational Planning. Paris: UNESCO, 1967.
Describes the various aspects of non-formal education activities in Tanzania indicating their financial support and distinctive features.

136. King, Hall, R. N. Hans and J. A. Lanweyers, eds. The Yearbook of Education. London: Evans Brothers, 1954, p. 630.
The role of education in social and economic development and planning is discussed in a series of essays. These discussions are useful in analyzing the role of non-formal education sector in social development.

137. Levine, Daniel U. and Robert J. Havighurst, eds. Farewell is School. Worthington, Ohio: Charles A. Jones Publishing Co., 1971, pp. 78-83.
The book contains a number of essays for and against schooling. Here attempts are being made to show how education without school is likely to create new social elitism thereby inequitable distribution of income. This criticism will help in developing a more pragmatic policy for non-formal education.

138. Lund, Ragnar. Scandinavian Adult Education. 2nd ed.; Copenhagen: Det Eauske Farlay, 1952.
This describes the development of folk schools, libraries, workers circles and radio programming in four Scandinavian countries.

139. Lyle, Jack, et al. "Algeria: Filling the Teacher Gap." Development Digest. Edited by P. N. Schwartz for AID, Washington, D.C., Vol. 6, No. 2, April, 1968.
Algeria is using a great variety of media--films, TV, radio, newspapers and programmed instruction--to upgrade its teacher corps at the same time it undertakes a rapid expansion of its educational system without great capital investment. Algeria has mounted a many-pronged campaign to raise the quality of its primary school teachers with a variety of in-service courses, most of whom have a minimal education.

140. Madge, C. "Education in a Peasant Society." In Yearbook of Education: Economics and Education, 1956, pp. 545-555. Edited by R. K. Hall and J. A. Lauwerys. London: Evans Brothers, 1956.
This is a discussion of education in a peasant society with illustrative material from Thailand.

141. Mason, Ralph H. and Peter G. Haines. Co-operative Occupational Education and Work Experience in the Curriculum. Dansville, Ill.: The Interstate Printers and Publisher's Inc., 1965.
The book shows how U.S. schools use the work environment in many ways to secure general education and vocational education outcomes--a mixture of both formal and non-formal education. Starting with an overview of the emerging needs in the world of work, final chapter of the book concentrates on the relationship between apprenticeship and co-operative industrial education.

142. Mitchell, M. B. Comments on the Use of New Techniques in Teaching, Conference on African States on the Development of Education in Africa. Addis Ababa, May 15-25, 1961, Final Report. Paris: UNESCO, n.d., pp. 91-96.
The comment includes programmed learning, films, television and other modern communications devices with comments on their relevance to African conditions. The use of audio-visual techniques for learning in non-formal modes is widely recognized.

143. Mushkin, Selma J. Resource Requirements and Educational Obsolesence. Paris: OECD, October 24, 1963, p. 16. (DAS/PD/63.80).
The need for continuous re-education of the whole labor force in a society governed by rapid technological change is stressed, and the author makes suggestions for appropriate educational reform.

144. Paik, Ki Hyun. "Non-Formal Education in Korea: Programs and Prospects." In New Strategies for Educational Development: The Cross-Cultural Search for Non-Formal Alternatives, Chapter 14. Edited by Cole S. Brembeck and Timothy J. Thompson. Lexington, Mass.: D. C. Heath, 1973.

The purposes of this paper are (a) to present some aspects of non-formal education programs in Korea; (b) to compare these programs with various components of formal education; (c) to evaluate in part the effectiveness of these programs and identify the gaps existing in them; and (d) to make recommendations for long-term planning and needed changes.

145. Pakistan, Ministry of Education. Report of the Commission of National Education. Karachi: Government of Pakistan Press, 1959, p. 360.

Outlining a guide to the future development of education in Pakistan, the report paid due attention to education in general as a determinant to economic development. Hence its importance for the study of non-formal education also.

146. Paulston, Rolland G. "Non-Formal Education--the Shadow School System." In New Strategies for Educational Development: The Cross-Cultural Search for Non-Formal Alternatives, Chapter 15. Edited by Cole S. Brembeck and Timothy J. Thompson. Lexington, Mass.: D. C. Heath, 1973.

This chapter examines Peru's non-formal or second school system, the varied assortment of short-term, skills-oriented educational programs offered by industry, by the military, by the government or by voluntary organizations. He maintains that "intensified research is urgently needed to develop appropriate planning and evaluation techniques for non-formal education. All countries will be well advised to maintain a running inventory of such activities and to create mechanisms for assessing, planning, and harmonizing their far-flung non-formal education programs. The importance of this research is yet to be fully appreciated in developing countries.

147. Paulston, Rolland G. "Non-formal Alternatives." In New Strategies for Educational Development: The Cross-Cultural Search for Non-Formal Alternatives, Chapter 6. Edited by Cole S. Brembeck and Timothy J. Thompson. Lexington, Mass.: D. C. Heath, 1973.

In this paper he has attempted two related tasks. "One has been to examine the growing awareness of educational planners concerning the need to enlarge the scope of planning to include some activities in the non-formal sector in designing alternatives for human-resource development. A second seeks to assess some of the more viable efforts to plan and implement a particular type of non-formal education activity, i.e., national youth services organizations in developing countries."

148. Phillips, H. M. "International Aid for Educational Development in the Form of Technical Assistance and Real Resources." In The Economics of Education, pp. 567-590. Edited by E.A.G. Robbinson and J. E. Vaizey. Proceedings of a Conference held by the International Economic Association. New York: Macmillan, 1966.

The paper discusses, among other things, international aid which can be made available, particularly through UNESCO, in support of various technical assistance programs in the field of non-formal education, including in-service training, films and audio-visual aids, adult education, etc.

149. Read, M. "Recent Development in Adult Education." Symposium on Popular Education. Organized by the Afrika Institute Study Centrum. Leiden: Universitarire Paris Leiden, 1953, pp. 50-74.

The author reviews experience with adult literacy campaigns in various British territories in Africa. This analysis may be helpful in developing an appropriate strategy for adult education.

150. Reimer, Everett. School is Dead. Garden City, N.Y.: Doubleday and Co., Inc., 1971, Chapter 1, pp. 21-30.

This is a very provocative book. While he is advocating this case against schools, he argues that present formal schooling is responsible for a negatively skewed distribution of income and constitutes a regressive tax.

151. Renner, Ricard R. Education for a New Colombia. Washington, D.C.: Superintendent of Documents, U.S. Government Printing Office, 1971. (HE. S. 214:14152).

While describing the different levels of Colombia's education, the author indicated the role of national apprenticeship service (SENA) which provides up to 3 years of vocational and practical training based on surveys of the country's need. SENA is supported by a payroll tax levied on employers. Chapter 12 is devoted to other educational programs such as literacy and fundamental education, educational television, etc.

152. Ribich, Thomas I. Education and Poverty. Washington, D.C.: The Brookings Institution, 1968, p. 163.

While discussing the poverty lines and the criteria of policy choice, he discussed education in general as an investment with respect to (a) job training, (b) dropout prevention, (c) compensatory education programs for culturally deprived children, (d) pre-school programs, (e) formal education. Despite the limited observations the conceptual and the measurement difficulties his main conclusion is that vocationally oriented training has a higher rate of pay-off than general education.

153. Rusk, Bruce, ed. Alternatives in Education. Toronto: General Publishing Company Ltd., 1971, pp. 127-133.

While discussing the alternatives in education, need for apprenticeships is stressed from the point of view of reducing educational costs. Industrial programs would provide an alternative to many of the courses currently offered in vocational high schools and community colleges thereby avoiding unnecessary duplication.

154. Schwartz, Bertrand. "Formal and Informal Education." In Essays on World Education Crisis of Supply and Demand, pp. 153-166. Edited by G. Z. Bereday. New York: Oxford University Press, 1969.

While discussing the various aspects of adult education through formal and nonformal modes, he enunciated three principles of adult education which are as follows.

(a) starting with the felt needs;
(b) self-evaluation;
(c) teaching by concepts and mental images.

155. Sheffield, James R. and Victor P. Diejomaoh. Non-Formal Education in African Development. New York: African-American Institute 866, United Nations, 1972.

This is a survey report of non-formal education programs over twelve African countries. The book is divided into five parts: (1) industrial and vocational training, pre-employment programs; (2) on-the-job and skill upgrading programs; (3) training programs for out-of-school youth in rural areas; (4) training programs for adult population in rural areas; and (5) multipurpose training programs.

156. Sheffield, James R. "Non-formal Education in Africa: Micro Solutions to Macro Problems?" Presented at the Fourteenth Annual Meeting of the African Studies Association, Denver, November 3-6, 1971.

The problems of financing non-formal educational programs are discussed in the context of African situations. The author further argues that non-formal education may be the missing link in the search for more employment opportunities.

157. Simons, John and James Allan. "Literacy Retention and Adult Education in a Tunisian Village." Presented at the Thirteenth Annual Meeting of the African Studies Association. Boston, October 21-24, 1970.

This report represents the findings of an evaluation of a Tunisian adult education program which was held in Tunisian Village from 1964-1967. The primary goal was to determine to what extent adults had retained literate abilities developed in the program. This suggests at least one approach in determination of program output.

158. Storr, J. Ricard. "The Growth of American Education." In Education and Economic Development, pp. 130-141. Edited by C. A. Anderson and Mary Jean Bowman. Chicago: Aldine Publishing Company, 1965.

The role of non-formal education in its growth is related to the growth of U.S. education in its historical perspective, U.S. education stems from family life. His analysis also includes the roles and scope of "learning by doing" in a pre-industrial society of "un-differentiated America."

159. USAID. "Non-Formal Education" In Development Digest, Vol. 11, No. 1, January, 1973.

The paper stressed that non-formal learning experiences have been the major source of acquiring social, economic and physical skills of the vast majority of people since time immemorial. The main conclusion of the paper is as follows: "The sharply rising costs and limitations of scope and developmental effectiveness of formal education in developing countries indicate the need for non-formal methods of imparting skills, knowledge and attitudes to large numbers of people at lower cost. But there is rather little organized information available on the many scattered activities of this kind: Experience should be studied and compared and new conceptions developed for ways of organizing non-formal educational systems."

160. U.S. Department of Health, Education and Welfare. Human Investment Programs: Adult Basic Education, Work Experience and Training. Washington, D. C.: Dept. of Health, Education and Welfare, September, 1966, p. 32.

This study considers the benefits and cost analysis of the adult basic education program and the work-experience programs. While analyzing the Adult Basic Education Program, a number of target populations with different levels of educational attainment, dropout rates, age and sex distribution, were taken into consideration. Again while measuring the costs and benefits of the work experience program, present values of the future streams of earnings of the trainees was compared with not only the earnings of the same individual before training but also with the earning of the non-participants. The increase in the values of output, savings in transfer payments, and increases in income taxes were included among benefits in both the analyses.

161. UNESCO. Report of Meeting of Ministers of Education of Asian States Participating in the Karachi Plan. Tokyo, April 2-11, 1962. Bangkok: UNESCO Regional Office for Education in Asia, 1962, p. 88.

Reviewing the Karchachi Plan, Annex IIIB criticizes the plan in the light of needs for Asian social and economic development. This discussion is useful background for the non-formal educational planner in Asia.

162. UNESCO. In-service Training for Primary Teachers. Geneva: UNESCO, International Bureau of Education, 1962, XLVII, p. 173. (Publication No. 240 also published in French as No. 239).

The study indicates the extent and organization of training, methods, international measures, future plans, and the categories of the staff involved. The financial implications are also discussed.

163. UNESCO. World Illiteracy at Mid-Century. Paris: UNESCO, 1954, p. 200. (Monographs on Fundamental Education XI.)

A statistical study of the extent of illiteracy throughout the world, followed by evaluation of some of the factors affecting levels of illiteracy--national income, industrialization, etc.

164. UNESCO. World Survey of Education, V. Educational Policy, Legislation, and Administration. Paris: UNESCO, 1971, Chapter IV, pp. 56-57.

While discussing the efforts made by various countries of the world to improve the quality of education, provisions for inservice training in different countries such as Norway, Japan, New Zealand, Poland, Federal Republis of Germany, etc., are elaborated and improved.

165. UNESCO. Developments in Audio-Visual Education. Paris: UNESCO, 1963, p. 57. (UNESCO Educational Studies and Documents, No. 50.)

Contains a number of articles on experiences of using television and programmed learning techniques in education.

166. UNESCO. Literacy Education: A Selected Bibliography: Paris: UNESCO, 1959, No. 18, p. 43.

An annotated bibliography of recent material, broken down into "organization of literacy campaigns and methods of instruction and materials for literacy teaching."

167. UNESCO. "A New Functional Approach to Literacy." In Development Digest. Edited by P. N. Schwartz for USAID, Washington, D. C., Vol. 6, No. 1, January, 1968.

UNESCO's five year experimental program for functional literacy is directly tied to a country's economic priorities, and literacy efforts are pinpointed in areas of heavy investments as a means of speeding development of the country as a whole even though the correlation between literacy and development is not known exactly.

168. UNESCO. "Use of the New Media." In Development Digest. Edited by P. N. Schwartz for USAID, Washington, D.C., Vol. 6, No. 2, April, 1968.

Use of new media often requires adaptation of the educational system, calling for planning, training, inter-agency co-operation, and audience research. In adult education, co-ordination is more difficult to assure, because of its varigated delivery systems. In the absence of a single structure, co-ordination at an early state is even more urgent. If planning envisages adult education in literacy, social education, community development, etc., it will necessarily have to examine the various resources which might bring to bear. These resources include professional educators but will also involve other ministries (agriculture, health, etc.), and the mass media. In short, adult education will have to be a part of overall national economic and social planning.

169. UNESCO. "Educational Wastage." In Development Digest. Edited by P. N. Schwartz for USAID, Washington, D.C., Vol. 6, No. 2, January, 1968.

Of about 30 million children enrolled each year in grade 1 of Asian schools, fewer than 50 percent are likely to complete their first level of education. The rest will either repeat grades or withdraw from school prematurely. Those who withdraw are likely to remain illiterate or lapse into illiteracy. This represents a tremendous waste of human potential, educational facilities, and training resources. The cost of wastage in the region is estimated at $100 million a year. The implication for non-formal education for school dropouts is evident.

170. Vaizey, John. The Economics of Education. London: Faberer and Fiber, 1962, p. 165.

Main topics are:

(a) What some economists said about education;
(b) Education as consumption or investment;
(c) The return to Education;
(d) Expenditure on Education;
(e) The finance of Education;
(f) Productivity of Education;
(g) Education in economic growth, etc.

Though the book does not treat non-formal education specifically, a great part of the analysis bears on non-formal education. Like formal school output, non-formal educational output is a complex social product. It can substitute for and complement formal education and offers a continuous opportunity throughout life to acquire new skills. Therefore non-formal education can contribute to economic development and social change. If this book is studied keeping in view this perception of non-formal education, the reader can relate much of the discussion of the book to non-formal education.

171. Waisanen, F. B. "Individual Modernity and Non-Formal Education." In New Strategies for Educational Development, Chapter 8. Edited by Cole S. Brembeck and Timothy J. Thompson. Lexington, Mass.: D. C. Heath, 1973.

While discussing the relationship between individual modernity and non-formal education, a field experiment in non-formal education pertaining to the Costa Rican phase of comparative study of Communication and rural development, is discussed with special reference to non-formal education.

172. Ward, Ted, J. Dettoni and Lois McKinney. "Designing Effective Learning in Non-formal Modes." In New Strategies for Educational Development, Chapter 9, pp. 111-128. Edited by Cole S. Brembeck and Timothy Thompson. Lexington, Mass.: D. C. Heath and Company, 1973.

The conclusion of the paper is as follows: Designing non-formal education that will lead to effective learning is a complex task. The relationship of the learning experience to the learners' characteristics and life experiences constitutes the most demanding problem. Almost as complex is the problem of developing an administrative evaluative framework adequately assuring the continuous refinement of the system. No simple response to an educational need--whether formal or non-formal is apt to be adequate.

C. THE ECONOMICS OF NON-FORMAL EDUCATION

C_1: COST-BENEFIT ANALYSIS

C_2: INVESTMENT AND RETURN IN HUMAN CAPITAL

C_3: ECONOMICS OF ON-THE-JOB TRAINING AND RETRAINING

C. THE ECONOMICS OF NON-FORMAL EDUCATION

C_1: COST-BENEFIT ANALYSIS

173. Bowman, Mary Jean. "From Fields to Infant Training Industries." In Education and Economic Development, pp. 98-129. Edited by C. A. Anderson and Mary Jean Bowman. Chicago: Aldine Publishing Company, 1965.
This article directs attention to factors that inhibit and foster extension of on-the-job training: also deals with questions of its costs and benefits in the dynamic socio-economic setting of development.

174. Chamberlain, Neil W. Contemporary Economic Issues. Homewood, Ill.: Richard D. Irwin, 1969, pp. 145-185.
While discussing the economics of higher education, he made a number of general comments as regards economists' levels of perspective on education, investment in human capital, and its returns which are directly applicable to non-formal education also.

175. Goldwasser, Betti. "An Approach to Cost-Effectiveness Studies in Manpower Programs." Washington, D.C.: U.S. Department of Labor. Office of Manpower Policy, Evaluation and Research, June, 1966, mimeographed.
Stressing the need for systematic cost-benefit analyses of manpower training programs under the Manpower Development and Training Act of 1962, a number of cost-benefit studies of training programs is listed. The problem area in the field of sample design control and follow-up reports is discussed.

176. Machlup, Fritz. The Production and Distribution of Knowledge in the United States. Princeton, N.J.: Princeton University Press, 1962, Chapter VI, pp. 241-260.
Deals with stage, cinema, radio and television and types of knowledge covered by them. He also discusses expenditures for their services, current and capital outlays (1940-1957).

177. Machlup, Fritz. The Production and Distribution of Knowledge in the United States. Princeton, N.J.: Princeton University Press, 1962, Chapter IV, pp. 64-68.
Deals with education in the church; discusses current congregational expenses and expenditures on new construction of churches and synagogues.

178. Powel, H. John Jr. and R. D. Lawson. An Annotated Bibliography of Literature Relating to the Costs and Benefits of Graduate Education. Washington, D.C.: The Council of Graduate Schools, March 1972.

This study and analysis of the literature relative to the costs and benefits of graduate education was made under the following headings: the economics of higher education; output and benefits of higher education; inputs and costs, general; inputs and costs measurement. This bibliography is important for two reasons: First, the literature dealing with inputs and costs applies to non-formal education; second, the foreword notes that the existing literature leaves the following important questions unanswered:

1. Adequate identification of the outputs and benefits of graduate education;
2. Agreement on how separately budgeted research and financial aid should be treated in determining the costs of graduate education;
3. Lack of a definitive and generally accepted set of procedures for allocating indirect costs to the outputs of graduate education; and
4. Lack of comparable data on a broad basis as to the actual costs of graduate education.

These unanswered questions and issues lie also at the heart of the problems confronting non-formal education.

179. Powel, H. John Jr. and R. D. Lawson. Elements Related to the Determination of Costs and Benefits of Graduate Education. Washington, D.C.: The Council of Graduate Schools, March 1972, Chapters 5 and 6.

Chapters 5 and 6 deal with procedures and bases for indirect cost allocation. Methodologies of indirect cost allocation and output use measurement are discussed. Chapter 6 is relevant because the problem of cost determination, including direct costs, is applicable to all education. Educational output tends to be disposed of in a non-market environment in which values for outputs are not determined like other commodities in the market. With the problems of cost determination and cost allocation, this makes inter program comparison particularly difficult.

Chapter 7 discusses the measurement of intermediate output use within higher education. This measurement is based on the principle of allocating costs on the basis of use, a principle which may have an application for measurement of intermediate output in final non-formal educational output.

180. Tickton, Sidney G. "Recent Development in Instructional Technology in the Developing World." A paper presented at the Educational Technology Workshop sponsored by the Council of Higher Education in the American Republics, May 26-29, 1971. Salvador (Bahia), Brazil: Academy for Educational Development, Inc.

Presents a brief analysis of three case studies, in El Salvador, Nigeria and American Samoa where educational technology such as television has been used as a part of program of school and out-of-school reform. The cost of the program has also been indicated.

181. Vaizey, J. and J. D. Chesswar. The Costing of Educational Plans. Fundamentals of Educational Planning. Paris: UNESCO/IIEP, 1967, p. 63.

Presents some general principles and methods of cost and shows their practical application in an illustrative African country. These general principles can be applied to costing of non-formal educational plans.

See also entry numbers: 1, 2, 6, 10, 15, 16, 17, 20, 21, 24, 30, 31, 32, 33, 34, 37, 39, 41, 46, 50, 51, 54, 56, 57, 63, 65, 71, 72, 76, 83, 87, 89, 92, 117, 123, 135, 152, 160, 285.

C_2: INVESTMENT AND RETURN IN HUMAN CAPITAL

182. Becker, Gary S. Human Capital. National Bureau of Economic Research, No. 80, General Series. Distributed by Columbia Press, New York and London, 1964, Part I, pp. 1-61.

In this section, important relations between earnings, investment cost, and rates of return are derived. His analysis produces a general theory with a wide variety of important applications, varying from the personal distribution of earnings to unemployment differentials. On-the-job training with emphasis on its effect on earnings is discussed.

183. Bowman, Mary Jean. "Converging Concerns of Economists and Educators." In Education and the Economics of Human Capital, pp. 52-67. Edited by Ronald A. Wykstras. New York: Free Press, 1971.

A sophisticated and yet non-mathematical treatment of crucial economic concepts, this article carefully identifies limitations to the economics analysis of education with evident implications for non-formal education. Opportunity cost relationships, the question of skill obsolescence and on-the-job training are among the many subject areas reviewed by the author.

184. Chamberlain, Neil W. "Some Further Thoughts on the Concept of Human Capital." In Cost-Benefit Analysis of Manpower Policies, Proceedings of a North American Conference, May 14-15, 1969, pp. 230-248. Edited by G. G. Somers and W. D. Wood. Published jointly by the Industrial Relations Center, Queens' University, Kingston, Ontario, and the Center for Studies in Vocational and Technical Education, the University of Wisconsin, Madison, Wisconsin, 1969.

These are criticisms of the human capital concept which has gained currency because we treat human beings not only as consumers but also as producers. He criticizes the presumption that the rate of return on investment in human capital can be compared with rate of return on other forms of investment to determine priorities. The approach to the problem is not value free in the sense that existing macro- and micro-economic analysis is based on the existing socio-economic and socio-political considerations. As such, it is hard to ignore incommensurable values "arising out of the investment in education and training because the costs and benefits of given investment programs differ depending on the way we look at the problem from the viewpoint of private enterprise, government, society or the individual. The incommensurability arises out of the class of interests which are fundamental and opposed--opposed partly because of the scarcity of resources and funds with which economists

are mainly concerned." The author indicated two types of problems of valuation: the first type arises out of phenomena which can have no accepted means of valuation; the second type arise out of an identification with a class interest or a status category, when these problems exist, no fruitful result can be achieved in attempting to calculate a rate of return. It seems that the author over-stressed the subjective aspect of valuation. It is also hard to deny that there is also an objective aspect of investment in training and education. However crude it may be, the application of cost benefit ratio or internal rate of return approach in any non-formal education program can serve as a guide to allocate scarce resources as well as help determine the priority.

185. Denison, E. F. "Measuring the Contribution of Education to Economic Growth." In Economics of Education, pp. 202-260. Edited by E. A. G. Robbinson and J. E. Vaizey. Proceedings of a Conference held by the International Economic Association. New York: Macmillan, 1966.

While measuring the contribution of formal education with special reference to the US, his verbal analysis of contribution from additional education can be applied to the contribution from non-formal education.

186. Goode, R. "Educational Expenditure and the Income Tax." In Economics of Higher Education. Edited by Selma J. Mushkin. Washington, D.C.: U.S. Department of Health, Education and Welfare, 1962.

It is argued that educated persons should be permitted to subtract from income a depreciation allowance on tuition payments. Such an allowance is apparently not required for on-the-job training costs.

187. Gordon, Margaret S. "Retraining Programs at Home and Abroad." In Proceedings of the Seventeenth Annual Meeting, Illinois, December 28-29, 1964, pp. 128-138. Madison: Industrial Relations Research Association, 1964.

The role of retraining in industry has been discussed. She, however, stresses the need for a balance between efficiency versus broader social objectives. She feels that this can be achieved through systematic application of various techniques of cost-benefit analysis. Despite the differences in labor market settings between the U.S. and Europe, she feels that European experience may help improvement of manpower programs of the U.S.

188. Johnson, Harry G. Towards a Generalized Capital Accumulation Approach to Economic Development. Paris: OECD, April 9, 1963, p. 10. DAS/PD/6310, classified, restricted.
A concise introduction to the state of economic theory in relation to the influence of education on economic growth, via its impact as a form of investment in labor.

189. Machlup, Fritz. The Production and Distribution of Knowledge in the United States. Princeton, N.J.: Princeton University Press, 1962, Chapter IV, pp. 107-120.
After discussing productivity of education in the church and training on the job, the author discusses the question of return on investment in education applicable both in the case of formal or non-formal education. In this connection, he also discusses social vs. private benefits in education.

190. Machlup, Fritz. The Production and Distribution of Knowledge in the United States. Princeton, N.J.: Princeton University Press, 1962, Chapter VI, pp. 265-271.
Deals with advertising expenditures and types of knowledge produced by advertising.

191. Marshall, Alfred. Principles of Economics. 8th ed.; New York: Macmillan and Co., 1949, p. 626. (1st ed., 1890).
An early discussion by the classical economist of the affects of training and experience on productivity and consequently on wages.

192. Nigeria, Federal Ministry of Education. Investment in Education. The Report of the Commission on Post-school Certificate and Higher Education in Nigeria. Lagos: Federal Government, 1960, p. 120, tables, diagrams and map.
An effort is made to relate educational expansion to economic development. In this connection, Harbison's manpower survey is particularly important.

193. OECD. "Study Group in the Economics of Education." Economic Aspects of Higher Education. Paris: OECD, 1964, Part I, pp. 47-59.
Here general problems of returns on investment in education are discussed; and a reference has been made to non-formal education.

194. OECD. "The Mediterranean Regional Project." Forecasting Educational Needs for Economic and Social Development. Paris: OECD, 1962, Chapters I through VI, pp. 7-73.
This book attempts to assess educational needs in general in the light of long-term targets for economic and social development and to make concrete recommendations on investment in education. The material can be of great use for making out a case for investment in non-formal education though this did not specially distinguish the investment between formal and non-formal education as such.

195. Renshaw, Edward. "Estimating the Returns to Education." Review of Economics and Statistics, August, 1960, p. 332.
While estimating the returns to education he explained the reasons why he prefers the median to mean in measuring estimates and return from education. This is applicable to non-formal education evaluation as well.

196. Rottenberg, S. "The Economics of Occupational Licensing." A paper read before the National Bureau of Economic Research Conference in Labor Economics, April, 1960. Aspects of Labor Economics, pp. 3-20.
The importance of on-the-job training is discussed noting incidentally that state occupational requirements often permit on-the-job training to be substituted for formal schooling.

197. Simmons, John. The Income Benefits from Formal and Informal Education: Estimate for a Socio-Economic Model. Economic Development Report No. 211. April, 1972. Cambridge, Mass.: Center for International Affairs, Harvard University, 1972.
Using survey data from the Tunisian show industry to estimate earning regressions, the author found that work experience was much more significant than using cognitive skills on the job with primary schooling in predicting earning. The policy implications are discussed.

198. Singer, H. W. "The Notion of Human Investment." Review of Social Economy, Vol. 24, No. 1 (March 1966), pp. 1-14.
A large portion of economic progress can be attributed to the human factor--better quality labor, better education, better training and more knowledge. In this connection the different models showing the different approaches to economic and social growth are discussed. Non-formal education contributes to establishing early or "pre-take-off" conditions for social and human development, and the author, thus, sets its place in the developmental process.

199. Smith, Adam. The Wealth of Nations. New York: Modern Library Edition, pp. 106-109.
Young persons are supposed to respond favorably to uncertainty and are prone to overestimate their ability and change of good fortune. A generalized burden and justification for expanded non-formal educational activity.

200. UNESCO. Readings in the Economics of Education. Paris: UNESCO, 1968, pp. 675-679.
This deals with the conditions for substantial return to investment in adult literacy programs. After explaining the political, social and educational conditions on which the success of a literacy campaign depend, the choice of method with regard to cost and training is explained.

201. UNESCO. Economic and Social Aspects of Educational Planning. Paris: UNESCO, 1964, Chapter I, pp. 15-54.
This chapter opens the discussion of how education can best be related to economic and social development. Reference is made to non-formal education (a cumulative rise in efficiency in work units per year) as training on the job without schooling as well as educational expenditure and assessing the returns on education.

202. UNESCO. Economic and Social Aspects of Educational Planning. Paris: UNESCO, 1964, Chapters II and VI, pp. 59-66 and 111-129, respectively.
These two chapters are concerned with human resource assessments. The discussion includes a strategy for human resource development and the survey of on-the-job training programs.

203. UNESCO. World Campaign for Universal Literacy. Paris: UNESCO, 1963, p. 84.
A report of a proposed 10 year campaign to bring literacy to two-thirds of the 500 million illiterates in the member states of UNESCO mainly through non-formal education. There is a fairly detailed analysis of costs for such a program and of financial alternatives.

204. Weisbrod, Burton A. "The Valuation of Human Capital." Journal of Political Economy, Vol. 69, No. 5 (October, 1961), 415-436.
A pioneering article attempting the estimation of the present value of a man; productivity; consumption; and the discount rate; estimate of capital values. The present value figure for U.S. males of different age groups from data on money earnings, labor force participation rates, mortality rate and consumption, are developed. This article should provide a tool of analysis for the purpose of estimating the present value of a man, etc. with regard to

investment in non-formal education. The present value approach is one of the most important decision criteria in investment.

See also entry numbers: 3, 4, 14, 22, 26, 29, 44, 45, 58, 60, 67, 69, 70, 77, 80, 81, 82, 86, 90, 91, 95, 111, 170, 171.

C_3: ECONOMICS OF ON-THE-JOB TRAINING AND RETRAINING

205. Abraham, Karl. "Technical Education." In Economics of Education, pp. 547-557. Edited by E. A. G. Robbinson and J. E. Vaizey. Proceedings of a Conference held by the International Economic Association. New York: Macmillan, 1966.

Technical education offered in school and out of schools with special reference to Germany is discussed. Particular attention is given to the costs of an apprentice training.

206. Arrow, Kenneth J. "The Economic Implications of Learning by Doing." Review of Economic Studies, Vol. 29 (1961-1962), 155-173.

Technological change is a function of learning by doing and is thus embodied in factors of production. "The hypothesis advanced is that technical change in general can be ascribed to experience. The implications of a simplified mathematical model incorporating this hypothesis are examined for wage earners, profits, and inducement to invest and the rate of interest. The presence of learning means that an act of investment benefits future investors but that this benefit is not paid for by the market. This externality causes the amount of investment in the competitive model to fall short of the socially optimal level." The model could be extended to include institutional forms of learning, considered to be a by-product of experience in production.

207. Bachmura, Frank T. "The Manpower Development and Training Act of 1962--Its Significance for Rural Areas." Journal of Farm Economics, Vol. 45, No. 1 (1963), 61-72.

The repercussions of the Manpower Development and Training Act is discussed in the rural context of the U.S. economy. The particular emphasis is given to relationship between MDTA and under-employment. The MDTA of 1962 provides instruction and supervised work on-the-job for unemployed, unskilled, and disadvantaged through institutional and another part on-the-job training. The client groups to be served for obtaining marketable skills are persons aged 16 and over and workers whose jobs were endangered by the change in technology. This manpower development, maintenance and utilization efforts by U.S. government through non-formal education should be considered to be a major breakthrough in a society such as the U.S.

208. Borus, Michael E. "The Cost of Retraining the Hardcore Unemployed: An Economic Evaluation of the 1963 and 1965 Amendment of the Manpower Development and Training Act." Labour Law Journal, Vol. 16, No. 9 (Sept., 1965), 574-583.
The title of the article is self explanatory. The MDTA of 19[illegible] constitutes two aspects of training: institutional and on-the-job training. The author argues that the provision for training the hardcore unemployed by amending MDTA will influence the economic effectiveness of the whole program because of the increased retraining allowances and low record employment of the hardcore unemployed. Thus the cost of retraining the hardcore unemployed is very high, although he discussed the benefits of such retraining. The analysis is limited to economic varaibles.

209. Borus, Michael E. The Economic Effectiveness of Retraining the Unemployed. Research Report to the Federal Reserve Bank of Boston, No. 35, July 1, 1966, p. 219.
This study discusses the costs and benefits of retraining for the individual worker, the government and the economy as a whole with special reference to the U.S. Connecticut retraining programs. The cost benefit ratio for the economy is found to be higher than that of the government. This indicates that there are marked externalities in the training program. He also argued that the 1963 amendments of the Manpower Development and Training Act which encompass the training for the hard-core unemployed would likely reduce the benefits to the government and the economy. He concludes with recommendations for increasing benefits.

210. Borus, Michael E. "Time Trends in the Benefits from Retraining in Connecticut." In The Development and Use of Manpower, pp. 36-46. Proceedings of the Twentieth Annual Winter Meeting in Washington, D.C., Madison Industrial Relations Research Association, December 28-29, 1967.
Using the data for the period covering 1962-1966, the time trends in average benefits before and after the retraining are discussed. Retraining benefits were substantial in each of the five years after the training, and it is the age of the trainee rather than the sex, race, marital status, and education which is the most important factor influencing the earnings of the trainee. A great part of the re-training constitutes training on the job.

211. Bowman, Mary Jean. "The Costing of Human Resource Development." In Economics of Education, pp. 421-450. Edited by E. A. G. Robbinson and J. E. Vaizey. Proceedings of a Conference held by the International Economic Association. New York: Macmillan, 1966.

After discussing the generalized concept of costs and its dimension, she stresses that worker education could be spaced at various stages of his life, and on-the-job training. The paper goes on to discuss whether in-service training had an opportunity cost and whether this was passed on to the workers. The effects of the specific training on the opportunity costs of employees undertaking training were investigated.

212. Clark, H. F. and H. S. Sloan. Classrooms in the Factories. New York: New York University Press, 1958, Chapter IV.

Resources are usually well spent by firms in familiarizing new employees with their organization through introduction of orientation courses. Knowledge thus imparted is associated with greater productivity than occurs when there is no orientation.

213. Fedorenko, N. P. "Economic Training for Engineering Specialists in the U.S.S.R." In Economics of Education, pp. 558-566. Edited by E. A. G. Robbinson and J. E. Vaizey. Proceedings of a Conference held by the International Economic Association. New York: Macmillan, 1966.

The Engineer and Economist in the U.S.S.R. are required to acquire knowledge in their respective areas of specialization both through higher schools and on-the-job training.

214. ILO. "Job Training for Youth." Development Digest. Edited by P. N. Schwartz for AID, Washington, D.C., Vol. 7, No. 4, October 1969.

A few of the ILO-supported programs for early school-leavers in Tunisia, Colombia and India are described. It is pointed out that in most LDCs the system of education is based on classical patterns and bears too little relation to national needs and environmental conditions.

School leavers find themselves ill-equipped to make the transition to work life and often need re-orientation and training with special and unorthodox arrangements to help the young get some foundations for participation in economic life.

215. Mincer, J. "On-the-Job Training; Costs, Returns and Some Implications." In Investment in Human Beings, p. 53. National Bureau of Economic Research, Special Conference 15, Supplement to Journal of Political Economy, October, 1962.

While discussing the implications of costs and returns from on-the-job training in the U.S., he makes a comparison of earnings of those who desired on-the-job training with those who did not.

216. Mincer, Jacob. "Investment in Human Capital and Personal Income Distribution." Journal of Political Economy, August, 1958.

He argues that a symmetrical distribution of investment in education implies a skewed distribution of earnings. This analysis can be extended to non-formal education although he defines educational investment by school years rather than costs.

217. Somers, Gerald G. "Our Experience with Retraining and Relocation." In Toward Manpower Policy, pp. 215-248. Edited by R. A. Gordon. New York: John Wiley and Sons, 1967.

Discusses the experience with retraining under the following main headings: evaluation of retraining programs; retraining the disadvantaged; on-the-job training; retraining and relocation. While advocating a careful cost-benefit analysis of both on-the-job and institutional training programs, in order to have an appropriate programming, he suggests that a linkage should be established among the various U.S. manpower policies and programs.

218. U. S. Department of Labor. Cost-Effectiveness Analysis of On-the-Job and Institutional Training Courses. Prepared for the U.S. Department of Labor, Manpower Administration, Office of Manpower Policy, Evaluation and Research by the Planning Research Corporation, Los Angeles, California, 1967, p. 46.

Manpower Development and Training Act of 1962 as amended introduces both the institutional and on-the-job training programs for the unemployed, disadvantaged, and unskilled people. Using data derived from the reports on the progress of trainees under the MDTA program, the relative effectiveness of institutional and on-the-job training programs have been examined. Though their findings show the higher average net benefit-cost ratio for institutional training compared to on-the-job training, further research employing more sophisticated statistical techniques is suggested.

See also entry numbers: 9, 13, 18, 23, 25, 38, 42, 47, 63, 73, 85, 155.

D. PLANNING AND DEVELOPMENT

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219. Adrian, C. R., ed. Social Science and Community Action. East Lansing, Michigan: Institute for Community Development, Michigan State University, 1960.
A set of papers introducing the application of modern concepts in economics, sociology, political science and community planning.

220. Anderson, C. A. "Literacy and Schooling on the Development Threshold: Some Historical Cases." In Education and Economic Development, pp. 327-336. Edited by C. A. Anderson and Mary Jean Bowman. Chicago: Aldine Publishing Company, 1965.
Attempts are made to ascertain the extent and distribution of literacy through non-formal means during the formative period of the Western industrial economies such as U.K., U.S.A. and other countries such as Burma.

221. Anderson, C. A. The Social Context of Educational Planning, Fundamentals of Educational Planning. Paris: UNESCO/IIEP, 1967, p. 35.
Discusses social factors which educational planning should take into account but often ignores. The implication for non-formal educational planning is evident.

222. Balagh, Thomas. "The Problem of Education in Africa." The Centennial Review, Michigan State University, East Lansing, Michigan, Vol. 6, No. 4 (Fall, 1962), 526-552.
The need for development of a type of educational program and planning suited to the specific African needs (i.e., education to facilitate agricultural development) is stressed. From his analysis, a case for non-formal education may be developed.

223. Batten, T. R. School and Community in the Tropics. London: Oxford University Press, 1959, p. 177.
Primarily a manual for teachers and extension workers with illustrative material largely drawn from the Philippines.

224. Beaty, W. W., ed. Community Education Yearbook of the National Society for the Study of Education, 1958, Part I.
The book includes a series of descriptions and critiques of methods in community education by a number of specialists in this field.

225. Belshaw, H., chairman. Report of the Mission to Survey Community Development in Africa. New York: United Nations, 1958, p. 178.
An account of community development work in Africa based on a visit to English and French speaking East and West Africa.

226. Blandy, Ricard. "The Education Corps in Iran." Development Digest. Edited by P. N. Schwartz for AID, Washington, D.C., Vol. 4, No. 4, January, 1967.
The formation of a special army corps of teachers in Iran to spread literacy in rural areas followed the lines of the "Community Schools" developed in the Philippines and elsewhere. The Iranian education corps (Sepadeh Damesh) is a multipurpose instrument designed to help over-come rural poverty, has to reduce the level of unemployment among educated youth, and to provide a stabilizing influence while far-reaching rural reforms are carried out. It was instituted as part of a national program which was closely tied to the third development plan (1962-1968) which gives priority to rural and agricultural development, including non-formal education in rural areas.

227. Bowman, Mary Jean. The Shaping of Economics and Men. Paper given at the Conference on Education and Economic Development, Comparative Education Center, University of Chicago, April 4-6, 1963. Chicago: Committee on Economic Growth, Social Science Research Council, 1963.
While explaining the relation between formal and non-formal education and economic development, the adaptation of the various well-known development strategies for educational planning in order to ensure its maximum utility is discussed.

228. Butts, R. Freeman. American Education in International Development. New York: Harper and Row, 1963.
The book emphasizes the roles that educators overseas must take in creating "Communities of Modernizers" and a self-sustaining program of educational development.

229. Chesswas, J. Methodologies of Educational Planning for Developing Countries. Paris: UNESCO/IIEP, 1969 (two volumes).
Though there is no specific mention of non-formal education, it is clearly frontier literature on the educational planning methods in which non-formal education is critical.

230. Choldin, Harvey M. "An Organizational Analysis of Rural Development Projects at Comilla, East Pakistan (now Bangladesh)." In Economic Development and Cultural Change, Vol. 20, No. 1 (July, 1972), 671-690. University of Chicago Press.
The author maintains that the rural development projects at Comilla, Bangladesh, have been notable successes in the introduction of social and economic changes in Bangladesh, especially in comparison with other such efforts in South Asia. In this connection the author describes, among other things, the role of non-formal education.

231. Cormack, Margaret L. She Who Rides a Peacock. New York: Praeger, 1961, p. 264.

Using the questionnaire method, a perceptive study of the reaction of Indian students to their lives in a rapidly changing society is developed, suggesting that education must be adapted to social change so that the influence of education on development is based on qualitative as well as quantitative considerations.

232. Crane, Robert. "Technical Education and Economic Development in India Before World War I." In Education and Economic Development, pp. 166-201. Edited by C. A. Anderson and Mary Jean Bowman. Chicago: Aldine Publishing Company, 1965.

The author describes the quantitative and qualitative development of technical and industrial education in India indicating the deficiencies of the system which inhibited the growth of a modern industrial economy. The need for complementary opportunities for on-the-job training is emphasized and persisting historical discrimination in placement and a traditionalist elitism are noted as important impediments.

233. Cullather, James L. "The Missing Asset! Human Capital." Mississippi Valley Journal of Business and Economics, Vol. 20, No. 2 (Spring, 1937), 70-73.

The investment in human beings is almost always associated with a consumption element. As a result, a part of training costs at least will always be a consumption cost. When cost accountants understand this they will be in a position to better appreciate the significance and concept of human capital. This is important in that expensing rather than capitalizing the costs of training implies that these expenditures represent no future benefit. The problem of rational treatment of human capital, in taxation and public policy is also stated. This is a general discussion having clear policy implications for non-formal education investment.

234. Curle, Adam. "Tradition, Development and Planning." The Sociological Review, Vol. 8, No. 2, New Series (December, 1960), 223-238.

Citing experience in Pakistan, the need for planning in which the community actively participates is stressed. As such, non-formal education may provide a basis for linking tradition to development.

235. Dube, S. C. "Some Problems of Communication in Rural Community Development." Economic Development and Cultural Change, January, 1957, pp. 129-146.

Effectiveness of a dozen different communication methods varied widely due to the form of the media, the content of the message and the character of the agents of change in a group of Indian villages in Uttar Pradesh.

236. Economic Commission for Asia and the Far East, United Nations. Programming Techniques for Economic Development. Bangkok: ECAFE, 1960, p. 130.

A group of UN experts made a theoretical study of the planning process. Chapter 8 deals with manpower and educational planning which has relevance to non-formal education.

237. Edstrom, Lars-Olaf, Renee Erdos and Ray Prosser, eds. Mass Education: Studies in Adult Education and Teaching by Correspondence in Some Developing Countries. New York: Africana Publishing Corp., 1970, p. 380.

The book has 21 chapters which are divided into three sections: "Adult Education;" "Education by Correspondence;" and "The African Scene." Adult education is related to development; pushing out its development in Sweden, education by correspondence points into historical context. It is useful for policy recommendation pertaining to non-formal education.

238. Eide, K. "Developments and Growth in OECD Member Countries." In Economics of Education, pp. 176-201. Edited by E. A. G. Robbinson and J. E. Vaizey. Proceedings of a Conference held by the International Economic Association. New York: Macmillan, 1966.

An attempt has been made in this paper to assess the impact on educational planning of recent approaches--mainly by economists--to the vital questions of educational decision-making in general terms. Although the writer did not discuss non-formal education as such, the discussion is applicable to it.

239. Ewers, Colin. "Educational Planning and Economic and Social Development." International Journal of Adult and Youth Education, Vol. 15, No. 3 (1963), 133-141.

Some general remarks on planning and education, followed by a list of suggested essential steps in the planning process are made.

240. Foster, J. Philip. "The Vocational School Fallacy in Development Planning." In Education and Economic Development, pp. 142-166. Edited by C. A. Anderson and Mary Jean Bowman. Chicago: Aldine Publishing Company, 1965.

Starting with empirical studies in Ghana and other countries of Africa he argues that schools are remarkably clumsy instruments for inducing prompt large scale changes in under-developed areas.

241. Ginzberg, Eli. Manpower for Development: Perspectives on Five Continents. New York: Praeger, p. 330.

This study presents recent field studies in 27 countries on five continents to demonstrate that the key to development is raising the skill level of the population. Although countries like Ethiopia and Venezuela are dissimilar in nature, yet the author notes that all developing countries have a tendency to overvalue formal education, to neglect on-the-job training, and to discriminate against women in training and employment. Taking into account each country's uniqueness, he indicates general directions for remedial action. His analysis of the theory of human economy stresses the inter-relationship of a country's value system, political, social, economic and manpower institutions.

242. Griffiths, V. L. Educational Planning. London: Oxford University Press, 1962, p. 118.

It is a valuable introduction to the subject--a layman's guide to educational planning in general in the dynamic setting of growth in a less developed country. As such non-formal education implication is evident.

243. Harbison, F. H. "Human Resources and Non-Formal Education." In Non-Formal Alternatives to Schools, Chapter 1. Edited by Cole S. Brembeck. Lexington, Mass.: D. C. Heath, 1973.

Non-formal education is classified into three broad categories: (1) the category of programs for development of employed manpower; (2) activities designed to facilitate access to employment; and (3) activities not specifically related to labor force participation. These categories are illustrated by examples. He maintains that in some cases non-formal education is the only practical means of skill and knowledge development; in others it offers an alternative, and often a more effective one, to education and training than formal schooling. In some cases it can supplement, extend and improve the process of formal education.

244. Harbison, F. "The Prime Movers of Innovation." In Education and Economic Development, pp. 229-240. Edited by C. A. Anderson and Mary Jean Bowman. Chicago: Aldine Publishing Company, 1965.

Emphasizes the problem of creating managers and supervisors in an environment in which opportunities for effective learning of these skills in conjunction with work experience are lacking; also indicates that employing institutions in newly developed countries should "deliberately produce experienced manpower and hopefully, creative innovators beyond the requirements for their own activities, thus providing a spillover of talent for the rest of the economy."

245. Harbison, F. H. A Human Resource Approach to the Development of African Nations. Washington, D.C.: American Council on Education, n.d., p. 24.

The main headings of this monograph are as follows: a profile of human resource problems; employment generation and unemployment in urban areas; rural development; the dilemmas of formal education; developing the potential of non-formal education and training; the retention and motivation of African brain power; the human resources and the GNP approaches; some techniques of human resources assessment; conclusion and implications for higher education.

Non-formal education is viewed as an alternative to formal schooling as well as an improvement factor in formal education.

"Unskilled and semi-skilled workers in factories are most easily trained on-the-job. The skill and knowledge of farmers are best generated through extension and/or farmer training centers. Almost by definition, adult literacy programs are beyond the range of age-specific, graded schooling. The same is true of nutrition, health, or family planning education. In this general area, the leverage point is to be found in better organization, co-ordination and direction of related activities."

246. Harbison, F. H. "Quantitative Indicators of Human Resource Development." In Economics of Education, pp. 349-379. Edited by E. A. G. Robbinson and J. E. Vaizey. Proceedings of a Conference held by the International Economic Association. New York: Macmillan, 1966.

The author has used a composite index of human resource development to rank a representative list of 75 counties and to group them into four levels of human resource development. Statistical means for each of the indicators for each of the levels have been computed.

247. Harbison, F. H. "The Strategy of Human Resources Development in Modernizing Economies." In Education and the Economies of Human Capital. Edited by R. A. Wykstra. New York: The Free Press, 1971.

Several important constraints that retard human capital formation are identified with special reference to LDCs. He also argues that investments in formal education alone are not likely to solve critical skill shortages or persistent labor surpluses in modernizing socieites. Investments in education are likely to contribute effectively to rapid growth only:

1. If there are adequate incentives to encourage men and women to engage in the kinds of productive activity associated with skills acquired through education; and
2. If appropriate measures are taken to shift a large part of the responsibility for training to the major employing enterprises with provision of necessary technical guidance to enable them to develop in-service training programs along modern lines.

248. Harbison, F. H. "The Process of Educational Planning." Conference of African States on the Development of Education in Africa, Addis Ababa, May 15-25, 1961, Final Report. Paris: UNESCO, n.d., pp. 47-54 (UNESCO/ED/181).

After having an analytical discussion on the shortcomings of current education in Africa, process of educational planning keeping in view the need of a less-developed country is discussed, which has relevance to non-formal education.

249. Harbison, F. H. and C. A. Myers. Education, Manpower and Economic Growth, Strategies of Human Resource Development. New York: McGraw-Hill, 1964, p. 229.

The authors develop a composite index for ranking 75 countries into four levels of human resource development, in the light of which they analyse appropriate policies and strategies of human resource development, stressing the role of informal as well as formal education.

250. Henry, N. B., ed. Community Education Principles and Practice from World-Wide Experience. The Fifty-Eighth Yearbook of the National Society for the Study of Education. Chicago: University of Chicago Press, 1959, p. 417.

Essays on the nature and purposes of community development including reports from representative centers for community development in different countries.

251. Hirschman, Albert O. The Strategy of Economic Development. New Haven: Yale University Press, 1958, p. 217.
A forceful but controversial analysis of the economic development process. The Hirschman model gives new insight into the given process into which non-formal education should be fitted.

252. Holmberg, A. R. "The Research and Development Approach to the Study of Change." Human Organization, Vol. 17 (1958), 12-16.
A classic study depicting new ways of obtaining information needed for community development.

253. International Association of Universities. Some Economic Aspects of Educational Development in Europe. Paris: International University Bureau, 1961, p. 114.
The summary and papers of a conference held in 1960 discussed the future progress of education in general, particularly in relation to economic growth, and the planning requirements deriving therefrom.

254. Johnston, B. F. and J. W. Miller. "Agriculture in Economic Development." American Economic Review, Vol. 6, No. 4 (September, 1961), 556-593.
The authors discuss the role of agriculture in economic development indicating, in passing, the influence of the extension-education programs in agricultural productivity.

255. Jolly, Richard. "Manpower and Education." In Development in a Divided World, pp. 203-230. Edited by Dudley Seeps and Leonard Joy. Maryland: Penguin Books, Inc., 1971.
This chapter has sketched the barest outlines of a co-ordinated strategy for developing the human resources of a country to the fullest. The role of informal education is analyzed.

256. Lawrence, Robert de T. "Rural Mimeo Newspaper." Development Digest. Edited by P. N. Schwartz for AID, Washington, D.C., Vol. 8, No. 4, October, 1970.
The introduction of mimeographed newspapers throughout the Liberian countryside had the following results: literacy programs were stimulated, countryside news coverage was facilitated, inter-area and tribal knowledge was increased, and a channel for the spread of developmental ideas was opened.

257. Leagans, J. P. India's Experience with Training in Extension Education for Community Development. Ford Foundation. New York: State College of Education, 1961.
This is a review of the work undertaken in India to train rural development personnel.

258. Leibenstein, Harvey. "Shortages and Surplus in Education in Under-Developed Countries: A Theoretical Foray." In Education and Economic Development, pp. 51-62. Edited by C. A. Anderson and Mary Jean Bowman. Chicago: Aldine Publishing Company, 1965.
The factors that determine the demand and supply of various types of skills and their market is discussed. Skills are seen as the consequence of formal and informal education; and experience as part of informal education.

259. Lewis, W. Arthur. The Theory of Economic Growth. London: George Allen and Unwin, Ltd., 1955, p. 453.
A textbook for the study of economic development. Close attention is paid to education in general as a development factor.

260. Lewis, W. A. "Priority for Educational Expansion." Policy Conference on Economic Growth and Investment in Education, Part 3. Paris: OECD, 1962, pp. 35-49.
A number of pertinent observations on the relative importance of different levels of education--both formal and non-formal and their expansion in relation to the development of ten developed countries, is made.

261. Lyons, Raymond F. "Criteria and Methods for Assessing an Educational System." Planning Education for Economic and Social Development. Paris: OECD, 1963, pp. 57-65.
The preliminary task of educational planning, assessing the nature of the existing situation, is discussed. It is useful for non-formal educational planning because the approach developed can probably be utilized.

262. Marie, Primose Sister Vincent. "A Study of Effectiveness of the Education Program, the Radiophoric Schools of Sutatehza, on the Life of the Colombian Peasant Farmer." Unpublished Ph.D. Dissertation, St. Louis University, St. Louis, Missouri, 1965.
This is a study of the life of the Colombian peasant in terms of personal improvement, use of modern agricultural techniques, changes in living conditions, and the acquisition of literacy. It also analyzes the historio-cultural backgrounds of groups accepting or rejecting Sutatenza's integrated program of fundamental education in selected areas of the country.

263. Martin, Lee R. "Research Needed on the Contribution of Human, Social and Community Capital to Economic Growth." Journal of Farm Economics, Vol. 45, No. 1 (February, 1963), 73-94.

While defining the unconventional inputs as human, social, and community capital resulting from investment in human beings, the problems of estimating returns and costs for these inputs are discussed. The inadequacy of the conventional explanations of economic growth are also explained. There is also a survey of the pioneering literature in the economics of non-formal education.

264. Meier, Gerald M. Leading Issues in Economic Development: Studies in International Poverty. New York: Oxford University Press, 1970, pp. 598-603.

Emphasizing the weight that should be given to the growth in the quality of human resources, Professor Meier illustrates and explains the possible implications of the quality component so far as the non-formal education is concerned: "The recent attempt to investment in human capital should prove salutory in cautioning against an overemphasis on physical capital to the neglect of the more intangible factors. When considered for a poor country, however, investment in human capital calls for new approaches and special emphasis that differ from those in advanced economies. An extensive system of formal education is a commendable objective--but it must necessarily be a distant objective. Instead of attempting to imitate the educational system of an advanced country, newly developing countries may more suitably concentrate, at least in the early phases of their development programs, on methods of informal education and on the objectives of functional education. These efforts are less time-consuming, less costly, and more directly related to manpower requirements than is a formal education system. As such, they are likely to prove most effective in improving the economic quality of human resources."

265. Meier, Richard L. Development Planning. New York: McGraw-Hill Book Co., 1965, Chapters 13-17, pp. 283-288 and 331-337.

In chapter 13, the needs for community and adult education are highlighted particularly by the reference system of lifelong adaptation. In chapter 17 possible direction for community education, community education vs. adult education and the question of determining priority are discussed.

266. Mushkin, Selma J. "Resource Requirements and Education Obsolescence." In Economics of Education, pp. 463-478. Edited by E. A. G. Robbinson and J. E. Vaizey. Proceedings of a Conference held by the International Economic Association. New York: Macmillan, 1966.

A comprehensive educational programme is needed both at formal and non-formal levels to face the problems of technological displacement, effective use of womanpower, upgrading of unskilled workers and retraining for effective professional performance.

267. Myers, C. A. and F Harbison. Education, Manpower and Economic Growth. New York: McGraw-Hill, 1963, p. 229.

The global analysis of human resource development using four groups of countries at different levels of development is attempted and the relations between human resource development and economic growth is shown with due reference to non-formal education.

268. Myint, Hla. "Social Flexibility, Social Discipline and Economic Growth." Paper presented to UNESCO Expert Working Group on Social Pre-requisites to Economic Growth, Kyrenia, Cyprus, April, 1963. Paris: UNESCO/SS/SP/13, pp. 3-6, mimeographed.

Highlights the nature and need for investment in social and human capital with a clear implication for non-formal education. Poor investments in human capital apparently cannot be discontinued; they tend to be self-perpetuating. The productivity of investment in human capital can be conceived of in terms of greater flexibility and adaptability of the social and institutional framework. This may create a condition in stimulating changes and for receptiveness and adaptability to these changes. The emphasis is on formal education, yet he fails to note that formal schooling structure by its very nature tends to be rigid and this makes it difficult for required educational innovation and social change. Viewed from this perspective, non-formal education, by its very nature unstructured and heterogeneous in character, tends to be more adaptable in the dynamic setting of growth and development.

269. Myint, Hla. "An Interpretation of Economic Backwardness." In Economics of Underdevelopment. Edited by A. N. Aganwala and S. P. Singh. Bombay; New York: Indian Branch, Oxford University Press, 1958.

In defining under-development and causes and failures contributing to it, Myint discusses investment in education in general terms--an analysis which can be applicable to non-formal education also.

270. Nair, Kusum. Blossoms in the Dust. London: Duckwork and Co.
An attempt has been made to show how unimaginative educational expansion in India disrupts rather than assists rural development. This is an analysis from which much can be learned concerning the role of non-formal education.

271. Neff, K. L. Education and Development of Human Technology. Bulletin of U.S. Department of Health, Education and Welfare, Office of Education, 1962.
The functional role of education is discussed, followed by comments on specific problem areas such as literacy, vocational training, teacher training, education of women, part-time and correspondence education, and teaching.

272. Neff, K. L. "Education and the Forces of Change." International Development Review, Washington, D.C., Vol. 4, No. 1 (March, 1962), 22-25.
The causes of the relative ineffectiveness of education as a development change is examined. The analysis will help developing non-formal education as an alternatives.

273. Neisser, C. S. "Community Development and Mass Education in British Nigeria." Economic Development and Cultural Change, July, 1955, pp. 352-366.
A sociological analysis of four community development projects in Nigeria has been attempted. The analysis has an important bearing with non-formal education.

274. Neurath, P. "Radio Forum Focuses as a Tool of Cultural Change in Indian Villages." Economic Development and Cultural Change, April, 1962, pp. 275-283.
The author reviews critically Indian experience with the teaching of agricultural science by radio.

275. Nichols, William H. "Accommodating Economic Change in Underdeveloped Countries." American Economic Review, Vol. 49, No. 2 (May, 1959), 156-168.
Some of the changes in the social, political and institutional environments with emphasis on educational growth which assist economic development are discussed with special reference to Japan.

276. OECD. "Study Group in the Economics of Education." Economic Aspects of Higher Education. Paris: OECD, 1964, Part I, pp. 60-78.
General problems of relating educational achievements to manpower needs are discussed in such a way that materials can be of use for analysis of non-formal education.

277. OECD. Methods and Statistical Needs for Educational Planning. Paris: OECD, 1967, p. 363.
Contains the results of a major effort to identify basic data needed for educational planning, to standardize definitions and statistical concepts and to suggest methods of statistical analysis. Clearly useful for non-formal education analysis.

278. Parnes, Herbert S. Planning Education for Economic and Social Development. Paris: OECD, October, 1963, 270 pp.
The book gives an introduction and in some cases detailed treatment of almost all aspects of the subject. A basic text for formal and non-formal educational planners.

279. Parnes, Herbert S. Forecasting Educational Needs for Economic and Social Development. Paris: OECD, October, 1962, 132 pp.
The methodology of the OECD Mediterranean Regional Project, linking estimated future manpower requirements via occupational classification is discussed.

280. Platt, William J. "Individuals: Neglected Elements in Economic Development Planning." International Development Review, Washington, D.C., Vol. 5, No. 3 (September, 1963), 12-16.
The need for cooperation of the individual in planning process is stressed as planning, in its ultimate analysis, is for the well-being of the individual. Economic and educational planning provide the basic examples.

281. Plumbe, W. J., ed. "Current Trends in Newly Developing Countries." Library Trends, Vol. 8 (1959), 125-341.
This reviews some programs in non-formal education that have been undertaken in developing countries with suggestions for improvement.

282. Psacharopoulos, George. "Measuring the Marginal Contribution of Education to Economic Growth." Economic Development and Cultural Change, Vol. 20, No. 4 (July, 1972), 641-658.
The purpose of this essay is to suggest a methodology for assessing the marginal contribution of each educational level to growth. The methodology used is illustrated by identifying quantitatively the sources of economic growth in Hawaii, and he concludes that "improvements in the quality of labor seem to have contributed 16% to the observed rate of growth, whereas increase in the quantity of labor have contributed 20%." The methodology is applicable with minor modification to non-formal education.

283. Regional Center for the Training of Educational Planners. Educational Planning In Developing Countries. New Delhi, April, 1963, p. 25.
A brief introduction to all aspects of the subject of educational planning. As such the material is helpful in understanding the role of non-formal education as a sub-sector.

284. Samonte, Quirico S. "Land Tenure and Public School Enrollment in the Philippines." Comparative Education Review, Vol. 5 No. 2 (October, 19[illegible]), 316-441.
With special reference to land tenure patterns in the Philippines, the author shows how features of the socio-cultural setting is relevant to both the formal and non-formal educational planner, even though not obviously related to the educational system.

285. Sautoy, P. Community Development in Ghana. London: Oxford University Press, 1958, p. 209.
This is mainly an historical account of community developments in Ghana since 1948 including detailed accounts of the administration of mass literacy campaigns.

286. Schramer, W., P. H. Coombs, F. Kahnert, and J. Lyle. The New Media: Memo to Educational Planners, plus three volumes of case studies entitled New Educational Media in Action. Paris: UNESCO/IIEP, 1967.
Summary and conclusion of a world-wide research project aimed at learning about the over-all feasibility of using educational TV, radio and other new media to solve educational problems; includes practical advice on how to diagnose any given situation and how to plan in order to maximize the chances of success.

287. Schultz, T. W. "Education and Growth." Social Forces Influencing American Education. Sixtieth Year Book of the National Society for the Study of Education. Chicago: University of Chicago Press, 1961, Part II, Chapter 3.
Secular increase in average earnings is usually attributed to changed technology and increased physical capital. Schultz argues that some portion should be attributed to investment in earner's education.

288. Smith, M. G. "Education and Occupational Choice in Rural Jamaica." Social and Economic Studies: Jamaica, Vol. 9, No. 3 (September, 1960), 332-354.
The study indicates how an unsuitable educational system may lead to frustration and unemployment of the educated in the rural environment. The non-formal education implications are evident.

289. Smith, R. S. "Population and Economic Growth in Central America." Economic Development and Cultural Change, January, 1962, pp. 134-150.
Literacy rate increases are a necessary condition for controlling human fertility and the role of non-formal education.

290. Svennilson, Ingvar. "Education, Research and Other Factors in Growth." In Economics of Education, pp. 71-88. Edited by E. A. G. Robbinson and J. E. Vaizey. Proceedings of a Conference held by the International Economic Association. New York: Macmillan, 1966.
While discussing a common denominator for the factors of growth the author indicates that on all levels, a "learning process through repeated experience and training may develop that gradually increases efficiency."

291. Thompson, T. D. Domasi Community Development Scheme, 1949-1954. Zombi, Nyasaland: U.S. Government Printing Office, 1955, pp. 70-80.
This is an account of the "Ilwaea Schools" which are examined as mass education centers.

292. UNESCO. The Relationship Between the Literacy Campaign and Economic Development. Meeting of Experts on Literacy Working Paper, UNESCO/worcit/2--Part III. Paris: UNESCO, June 18, 1962.
It discusses the economic significance of literacy education, and offers estimates of the costs of a world literacy campaign during the development decade.

293. UNESCO. Education for Community Development: A Selected Bibliography Education of Students, No. 8. Paris: UNESCO, 1954, p. 48.
An annotated bibliography covering works on community development and descriptive material on individual projects.

294. UNESCO. Social Research and Problems of Rural Development in South East Asia. Technology and Society Series. Paris: UNESCO, 1963, p. 268.
This book contains eighteen papers on agricultural extension and community development work in Asia. This is significant for those who wanted to know the non-formal education of extension and community work.

295. UNESCO. Report of a Meeting on Educational Broad Casting in Tropical Africa. Moshi, Tanganyika, September 11-16, 1961. Paris: UNESCO, 1961, p. 12.
Some 50 delegates discussed the possibility of making more effective use of radio for educational purposes in Africa; covers the present situation, prospects and makes policy recommendations.

296. UNESCO. Statistical Division, Department of Social Sciences. Statistics Needed for Educational Planning. Paris: UNESCO, June 6, 1963, p. 28. (Classified Limited, UNESCO/SS/ST/Sem/5.2).

Deals with the presentation and description of the various statistics needed for educational planning, dividing them into "basic" and detailed categories, according to the scale and nature of planning for which they are to be used.

297. UNESCO. Educational Planning in Asia. Paris: UNESCO, August 6, 1962, p. 35. (UNESCO/ED/194).

Planning needs and methods in the context of the Asian situation are discussed. There is a discussion of planning administration, also. The implications for non-formal education is obvious.

298. UNESCO. Overall Planning of Education. UN Economic and Social Council, Santiago, Chile, February 23, 1962, p. 68. (Conference on Education and Social Development in Latin America, UNESCO/ED/CEDES/50--Also published in Spanish.)

The methodology of educational planning and the nutrition of its endeavors is discussed. The methodology is important in application to non-formal education.

299. UNESCO. The Nature of Educational Planning. Bangkok, ECAFE, March 11, 1963, p. 7. Classified SDP, Working Paper No. 2(6). Prepared for the Meeting of the Group of Experts on General Development, Bangkok, April 9-18, 1963.

A concise study of the institutional framwork, methodology, and relationship between economic development and educational planning. The discussion on methodology is particularly useful for non-formal education.

300. Vaisey, John. "Introduction to Economics of Education." International Social Science Journal. Paris: UNESCO, Vol. 14, No. 4, Part I (1962), 619-632.

Some aspects of the relation of education and its planning to development is explored. Non-formal education implications are evident.

301. Weintraub, Leon. International Manpower Development: A Role for Private Enterprise in Foreign Assistance. New York: Praeger, 1969, p. 135.

The National Training Institute is examined in developed countries as one device for human resource development. He also discusses the National Industrial Apprenticeship Service (SENAI) and the National Commercial Apprenticship Service (SENAC) of Brazil, National Apprenticeship Service (SENA) of Colombia and National Educational Cooperation Institute (INCE) of Venezuela. These institutes have a good deal in common in that most of their financing comes from payroll taxes of the private sector.

302. Williams, N. L. "Teaching to Read by Radio." Fundamental and Adult Education, October, 1955, pp. 143-153.
An account of a literacy training project in Malaya, showing how the non-formal education program can be effective.

303. Wharton, Clifton R. Jr. "Education and Agricultural Growth: The Role of Education in Early Stage Agriculture." In Education and Economic Development, pp. 202-228. Edited by C. A. Anderson and Mary Jean Bowman. Chicago: Aldine Publishing Company, 1965.
Vocational training in agriculture as it is typically given in elementary and secondary schools is of little value; students of agriculture do not typically return to the farm, especially in the earliest stages of development. A variety of approaches to education for agricultural development is proposed both in schools and outside of them.

See also entry numbers: 12, 40, 43, 48, 53, 65, 66, 102, 104, 122, 126, 129, 136, 139, 145, 148, 151, 161, 168, 171, 202.